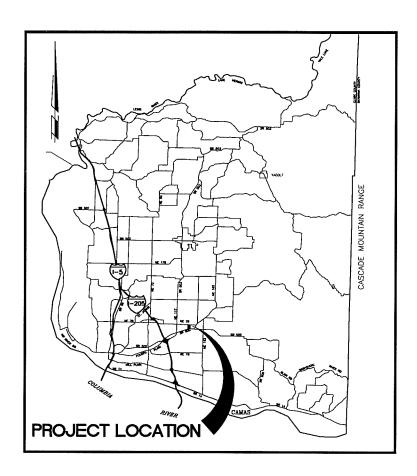
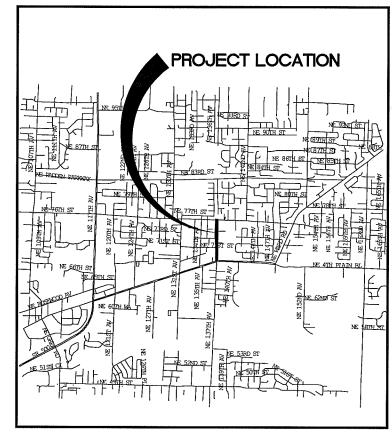
NE 137TH AVENUE

FROM NE FOURTH PLAIN BLVD TO NE 76TH STREET

PLANS FOR THE CONSTRUCTION OF ROADWAY, AND STORM DRAINAGE





INDEX OF SHEETS SUMMARY OF QUANTITIES AND LEGEND TYPICAL SECTIONS TYPICAL SECTIONS HORIZONTAL & VERTICAL CONTROL EROSION CONTROL PLAN EROSION CONTROL DETAILS ROADWAY DETAILS ROADWAY DETAILS 10 DO3 ROADWAY DETAILS DD1 DRAINAGE DETAILS DRAINAGE DETAILS PLAN & PROFILE (B.O.P. TO 14+00) PLAN & PROFILE (STA 14+00 TO 19+00) PLAN & PROFILE (STA 19+00 TO 24+00) PP4 PLAN & PROFILE (STA 24+00 TO E.O.P.) PLAN & PROFILE (NE 71ST STREET/NE 72ND STREET) DRAINAGE PLAN (B.O.P. TO 14+00) DRAINAGE PLAN (STA 14+00 TO 19+00) DRAINAGE PLAN (STA 19+00 TO 24+00) DRAINAGE PLAN (STA 24+00 TO E.O.P.) INTERSECTION PLAN TRAFFIC SIGNAL PLAN (NE 137TH AVE AT NE 76TH STREET) SIGNING & STRIPING PLAN CITY OF VANCOUVER WATER STANDARD DETAILS CITY OF VANCOUVER WATER STANDARD DETAILS

COMMISSIONERS:

BETTY SUE MORRIS, Chair JUDIE STANTON, Commissioner CRAIG PRIDEMORE, Commissioner



DEPARTMENT OF PUBLIC WORKS



PRELIMINARY 90% REVIEW SET

Quality Assurance	Project Manager	PW Director/ County Engineer
Bruce Klug, P.E.	Robin Krause, P.E.	Peter Capell, P.E.

proud peat, premising future
Recommended for Approval
Erosion

DESIGN AND ENGINEERING DIVISION- DESIGN SECTION

TEM_NUM	QUANTITY	UNIT	DESCRIPTION
1	1	L.S.	MOBILIZATION
2	1	CALC.	MINOR CHANGE
3	800	HOUR	TRAFFIC CONTROL LABOR
4	200	HOUR	TRAFFIC CONTROL SUPERVISOR
5	1	L.S.	TEMPORARY TRAFFIC CONTROL DEVICES
6	300	S.F.	CONSTRUCTION SIGNS CLASS "A"
7	1	L.S.	CLEARING AND GRUBBING
8	1	EST.	ROADSIDE CLEANUP
9	1	L.S.	REMOVAL OF STRUCTURES AND OBSTRUCTION
10	1	EACH	REMOVAL OF STRUCTURES AND OBSTRUCTION REMOVAL OF BUILDING
11	3133	C.Y.	
12	460	L.F.	ROADWAY EXCAVATION (INCL. HAUL)
13	500		SAWCUT EXISTING (ASPHALT) PAVEMENT
14		MGAL	WATER
	3093	TON	CRUSHED SURFACING BASE COURSE
15	1502	TON	ASPHALT CONCRETE PAVEMENT CL. A
16	1502	TON	ASPHALT CONCRETE PAVEMENT CL. E
17	1206	S.Y.	PLANING BITUMINOUS PAVEMENT
18	301	S.Y.	ASPHALT CONCRETE APPROACH CL. A
19	306	S.Y.	CEMENT CONCRETE APPROACH, 3-DAY
20	822	L.F.	TRENCH SAFETY SYSTEM
21	56	L.F.	DUCTILE IRON PIPE, 10 IN. DIAM.
22	234	L.F.	STORM SEWER PIPE, 10 IN. DIAM.
23	532	L.F.	STORM SEWER PIPE, 12 IN. DIAM.
24	6	EACH	MANHOLE 48 IN. DIAM. TYPE 3
25	6	EACH	CATCH BASIN TYPE 1 / CATCH BASIN 1L
26	5	EACH	CONCRETE CURB INLET
27	4	EACH	ABANDON EXISTING MANHOLE OR DRYWELL
28	6	EACH	ADJUST MANHOLE/ CATCH BASIN/ INLET/ DRYWELL METHOD
29	2	EACH	CONNECTION TO DRAINAGE STRUCTURE
30	11	EACH	ADJUST WATER/GAS VALVE RIM, COVER & FRAME
31	1611	L.F.	SILT FENCE
32	2	EACH	
33	2	EACH	STABILIZED CONSTRUCTION ENTRANCE
34	15		TIRE WASH
		EACH	INLET PROTECTION
35	0.25	ACRE	SEEDING AND MULCHING
36	68	C.Y.	BARK MULCH
37	272	C.Y.	COMPOST AMENDED TOPSOIL
38	23	EACH	PSIPE - 1.5 IN. CALIPER TREE (Crimson Sentry, Norway Maple)
39	15	EACH	PSIPE - SHRUB, EVERGREEN, 2 or 3 GAL (David Viburnum)
40	74	EACH	PSIPE - SHRUB, EVERGREEN, 2 or 3 GAL (Crimson Pygmy Barberry)
41	226	EACH	PSIPE - GROUND COVER, 1 GAL (Kinnikinnick)
42	2560	L.F.	CEMENT CONC. BARRIER CURB AND GUTTER
43	144	L.F.	· CHAIN LINK FENCE - TYPE 6
44	1	EACH	SINGLE 4 FT. WIDE CHAIN LINK GATE
45	60	L.F.	FENCE RELOCATION (INCL. GATE)
46	181	L.F.	MOWING STRIP
47	1	EACH	4 FT. WIDE CEDAR GATE
48	207	L.F.	6 FT. HIGH CEDAR FENCE
49	240	L.F.	PROTECTIVE CHAIN LINK FENCING
50	1707	S.Y.	CEMENT CONCRETE SIDEWALK
51	8	EACH	DETECTABLE WARNING PATTERN
52	4	EACH	MAILBOX SUPPORT, TYPE 1
	2	EACH	MAILBOX SUPPORT, TYPE 1 MAILBOX SUPPORT, TYPE 2
53			MAILDUA BUPPUK L. LYPB. Z
53 54	2	EACH	RELOCATE FLASHING SCHOOL ZONE SIGN

CITY OF VANCOUVER WATER IMPROVEMENTS

ITEM_NUM	QUANTITY	UNIT	DESCRIPTION
56	228	L.F.	TRENCH SAFETY SYSTEM (Water)
57	28	L.F.	CL 52 DUCTILE IRON PIPE FOR WATER MAIN, 6 IN. DIAM
58	200	L.F.	CL 52 DUCTILE IRON PIPE FOR WATER MAIN, 8 IN. DIAM
59	3	EACH	BLOWOFF ASSEMBLY
60	1	EACH	CUT AND CAP EXISTING 6 IN. WATERLINE (6" MJ Cap)
61	4	EACH	12 IN. X 12 IN. TAPPING TEE
62	4	EACH	12 IN. X 12 IN. TAPPING VALVE
63	1	EACH	8IN. X 6 IN. REDUCER
64	2	EACH	HYDRANT ASSEMBLY
65	4	EACH	RELOCATE WATER METER ROY & SERVICE

LEGEND

- FFFFFFFFFF.	NEW STORM DRAIN OR CULVERT NEW FILL LIMITS NEW CUT LIMITS SAWCUT LINE PERMANENT SLOPE EASEMENT NEW SILT FENCE
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	EXISTING EDGE OF PAVEMENT EXISTING CURB LINE EXISTING CENTER LINE EXISTING FENCE LINE EXISTING TELEPHONE LINE EXISTING WATER LINE EXISTING UNDERGROUND ELECTRIC EXISTING SANITARY SEWER LINE EXISTING GAS LINE EXISTING CULVERT EXISTING DITCH CENTER LINE EXISTING GUARDRAIL

SYMBOLS

a	NEW CATCH BASIN (CB)		EXISTING CURB INLET (CI)
•	NEW MANHOLE (MH)	<u> </u>	EXISTING CATCH BASIN (CB) EXISTING STORM MH
	NEW CURB INLET (CI)	Ö	EXISTING STORM MH EXISTING MISC MH
	NEW COMBINATION CURB INLET (CCI)	*	EXISTING SHRUB
III MB	NEW MAIL BOX	冥	EXISTING CONIFEROUS TREE
 ⊕	NEW HANDICAP RAMP	않	EXISTING DECIDUOUS TREE
(2100)			EXISTING SIGN
(C100)	CURVE TABLE	\odot	EXISTING DECIDUOUS TREE
₩	EXISTING TRANSFORMER		EXISTING J BOX
\boxtimes	EXISTING ELEC TOWER	(T)	EXISTING TELEPHONE MANHOLE
\mathcal{O}_{SAN}	EXISTING SANITARY SEWER MH	→	EXISTING TELEPHONE POLE
Q	EXISTING FIRE HYDRANT		
O _{CL}	EXISTING CLEAN OUT	≎	EXISTING LIGHT
-₩-	EXISTING GAS VALVE	G	EXISTING GUY ANCHOR
		-	EXISTING POWER POLE
Θ	EXISTING WATER METER	Б.	
-₩-	EXISTING WATER VALVE	Dr.	EXISTING MAIL BOX
¤	EXISTING SIGNAL POLE	T	EXISTING TELEPHONE PEDESTAL
	EXISTING TELEPHONE VAULT	\odot	EXISTING SPRINKLER HEAD
tv	EXISTING TELEVISION BOX	\triangle	TRAVERSE POINT
	EXISTING WELL	\otimes	TEST HOLE
ww	EXISTING BRUSH LINE		

CACACACA EXISTING HEDGE

PRELIMINARY

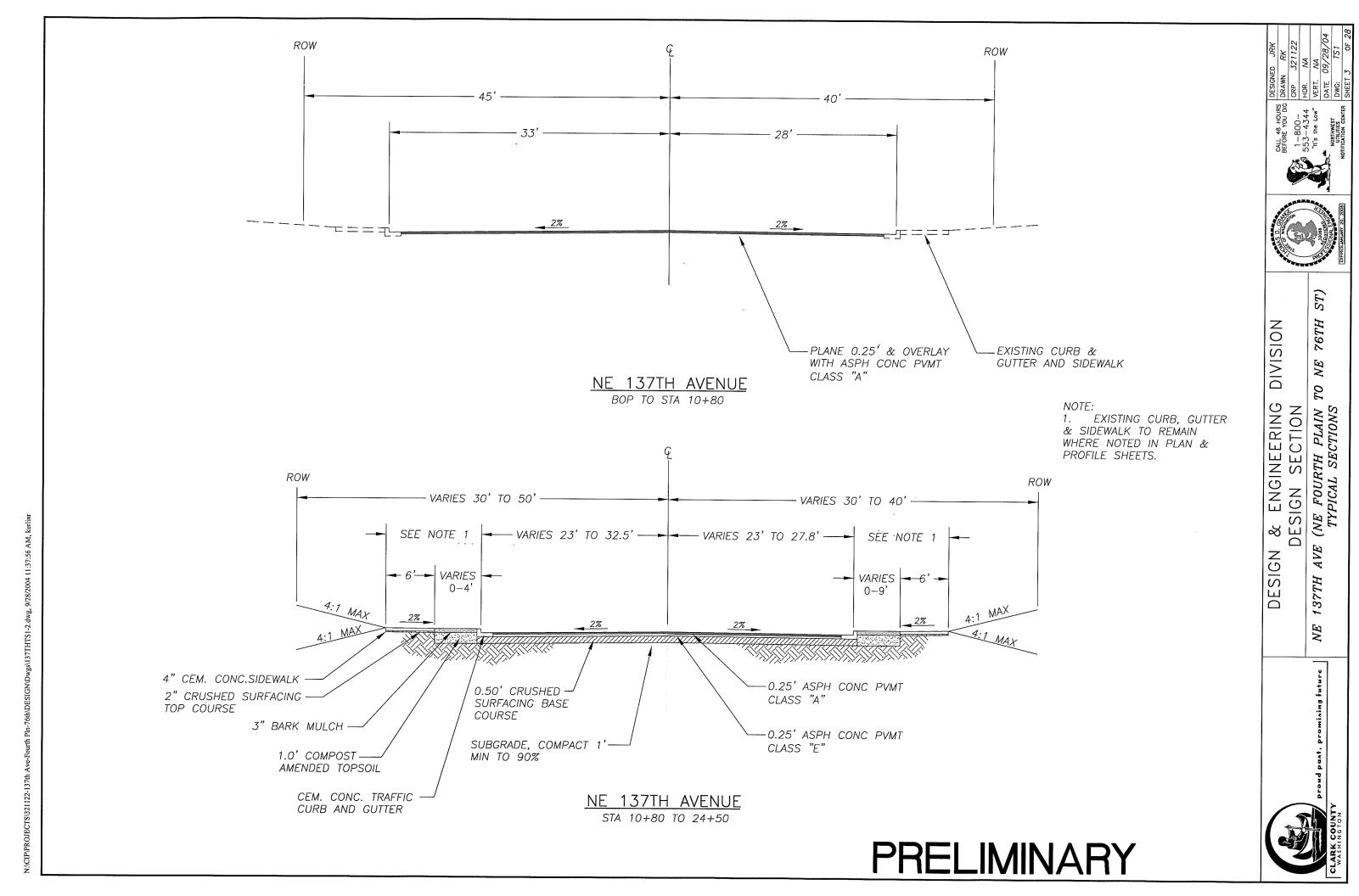


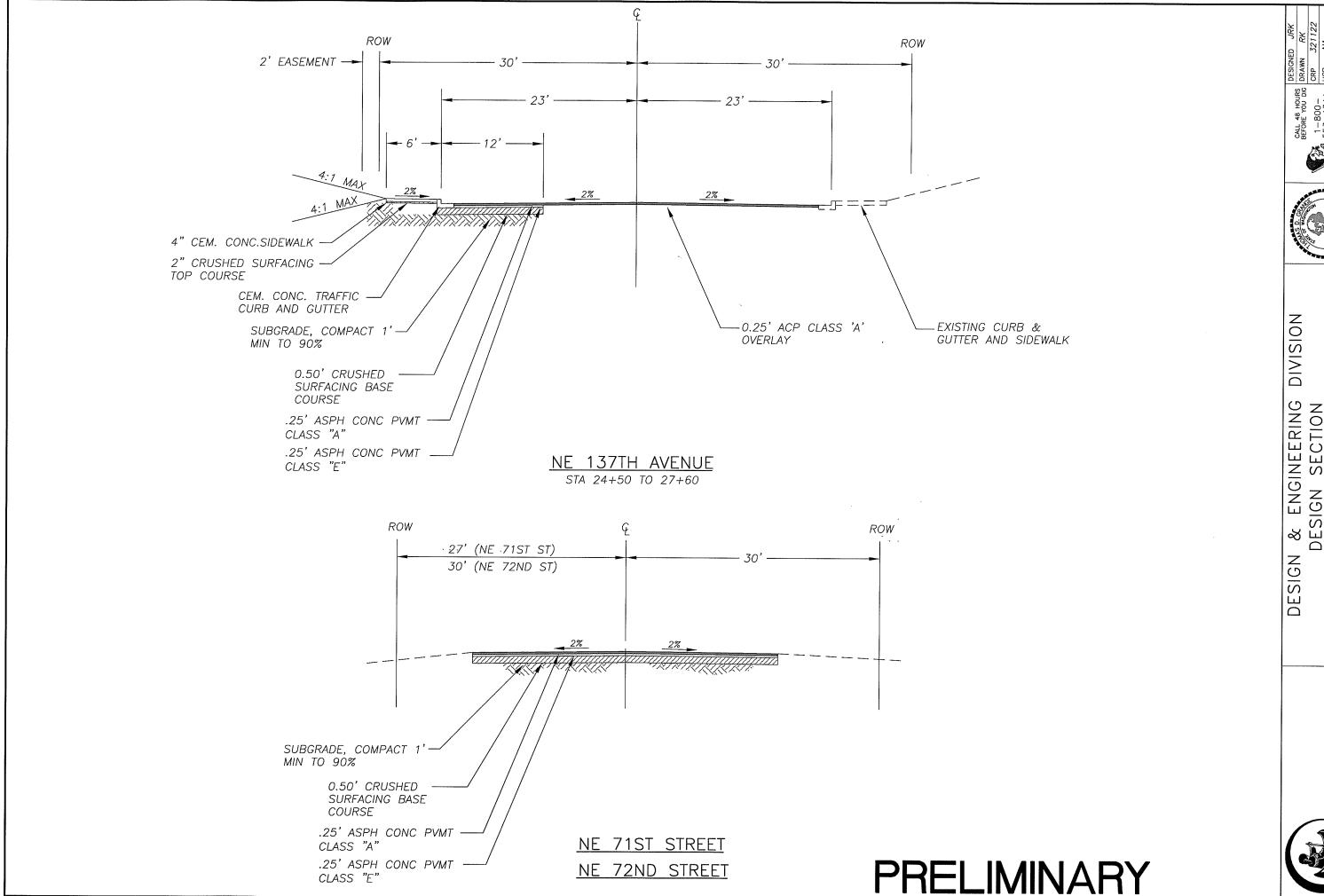




DIVISION DESIGN



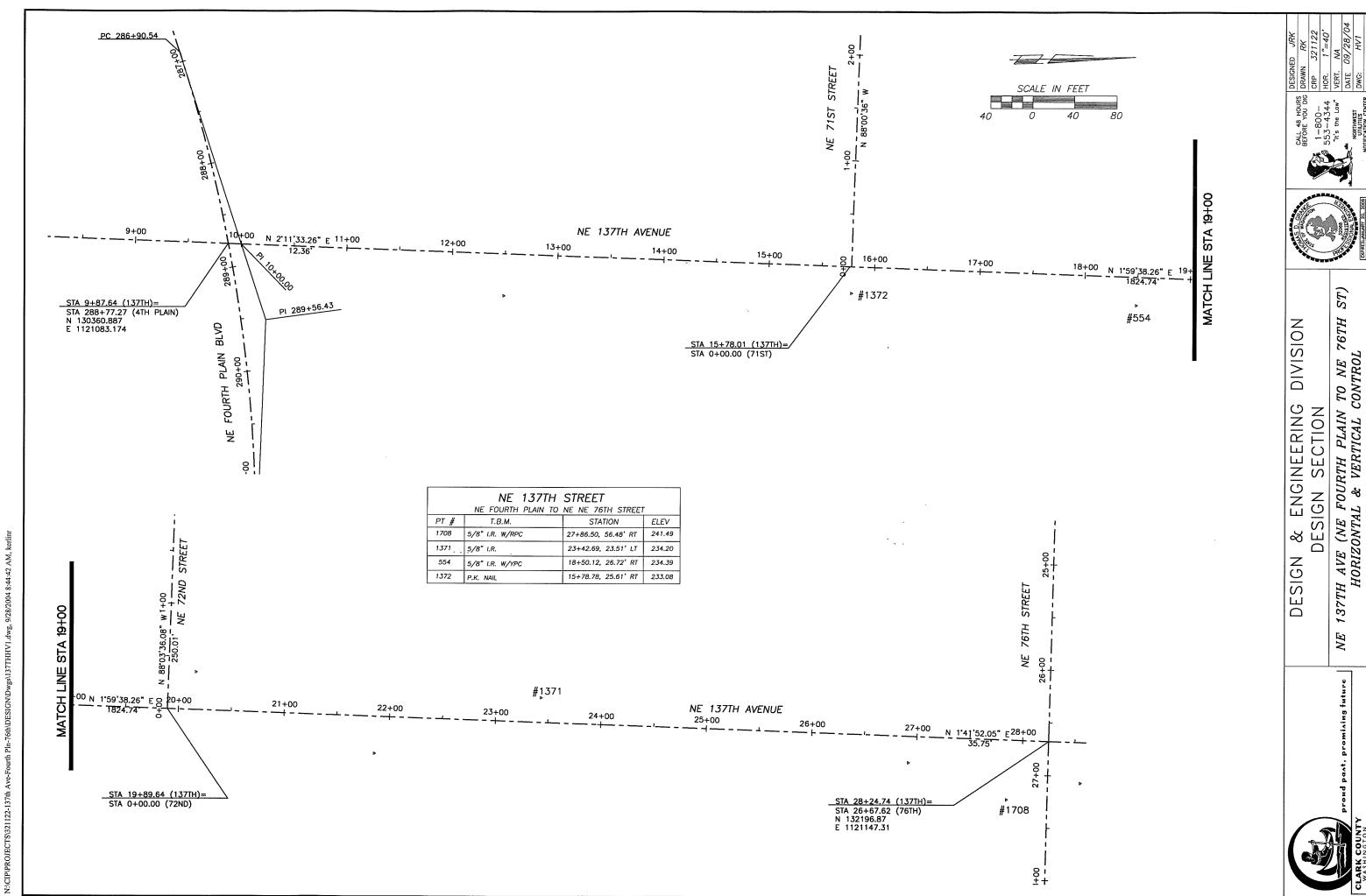


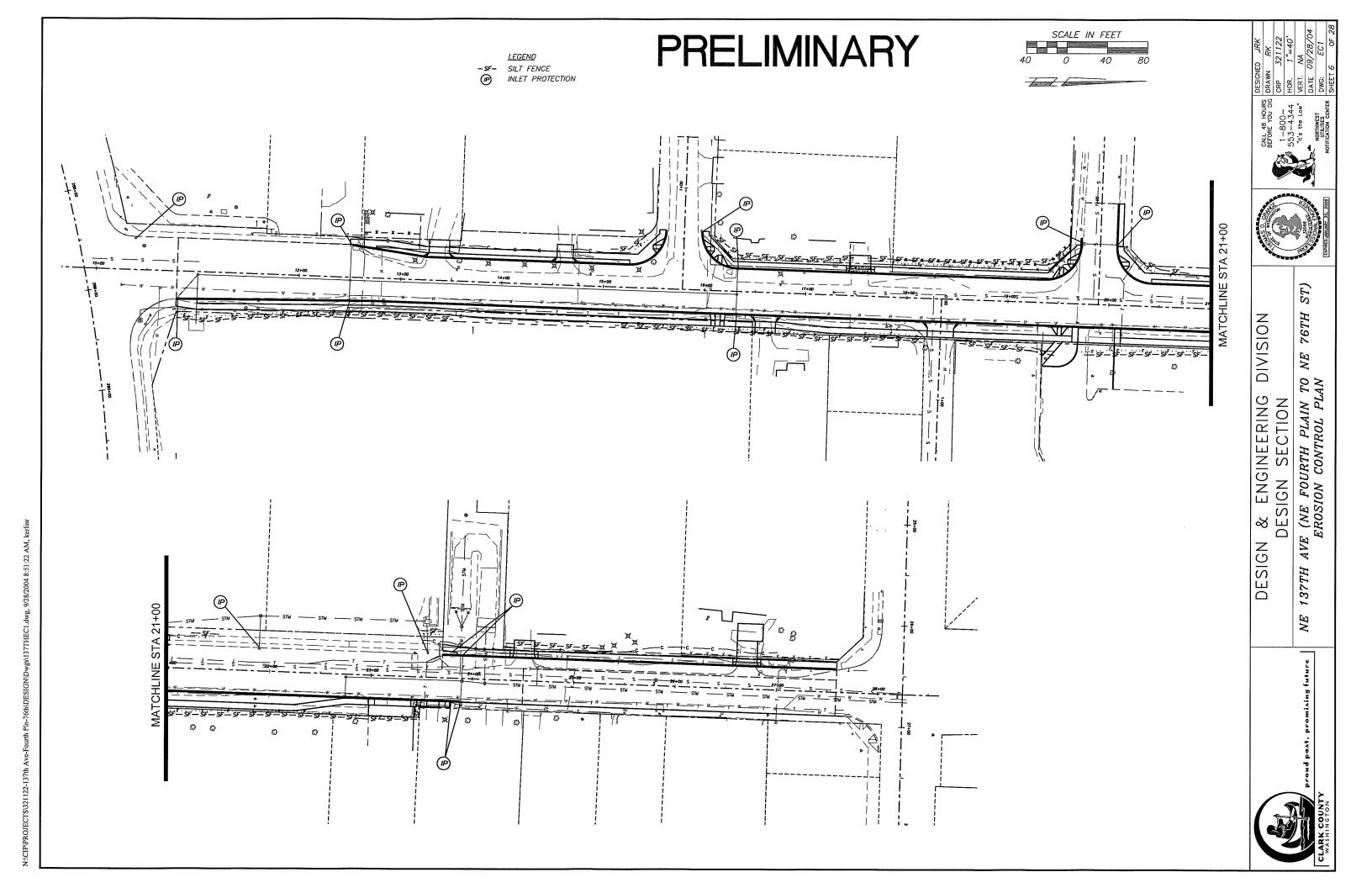


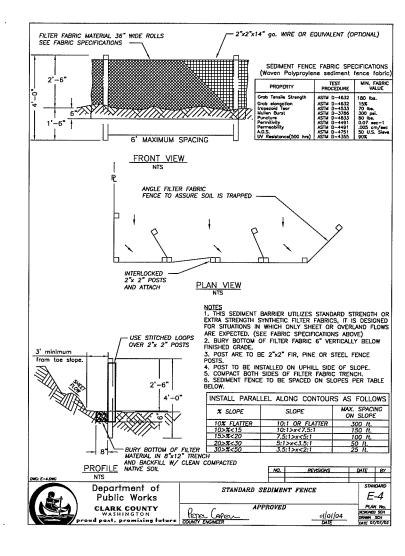


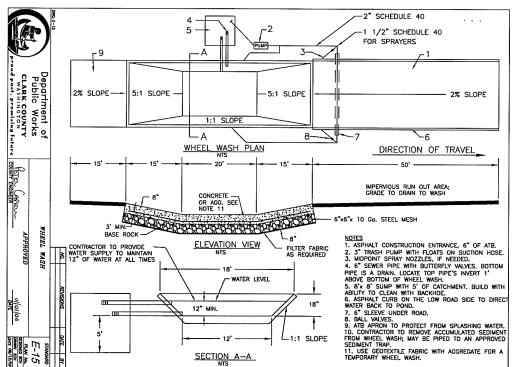
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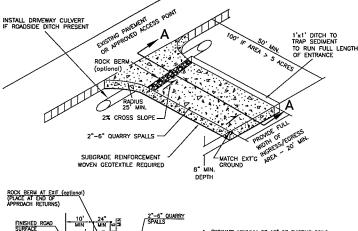
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ROCK BERN AT EXIT (Optional)
(FUCE: AT END OF
APPROCH RETURN)

PINISHED ROAD

IN SUBFACE

SUBFACE

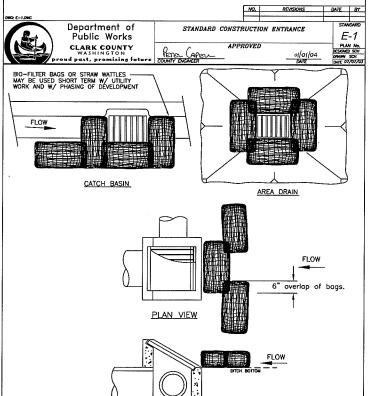
SUBGRADE REINFORCEMENT

WOVEN GEOTEXTILE REQUIRED

SECTION A-A

IOTES:

- FOR DEVELOPMENT PROJECTS REVIEWED BY ENGINEERING SERVICES. NOT FOR USE WITH SINGLE FAMILY OR DUPLEX RESIDENTIAL BUILDING PERMITS. SEE BUILDING DEPT. FOR GRAVEL CONSTRUCTION ENTRANCE PLAN.
- 2. INSTALL WOVEN GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.
- VEHICLE WASHDOWN AREA, IF REQUIRED, IS TO BE INSTALLED AND USED TO REMOVE SEDIMENT FROM VEHICLES THAT ARE ABOUT TO ENTER AN ESTABLISHED ROAD.
- 4. WASHDOWN AREA TO BE MADE UP OF CLEAN 2"— 6" QUARRY SPALLS, 1" DEEP (MIN) OVER WOVEN GEOTEXTILE FABRIC. WASHDOWN AREA TO BE FULL WIDTH OF ENTRANCE AND 50" (MIN.), AND 100" IF EXPOSED SOIL IS OVER 5 ACRES.
- 5. AT TIME OF PRECONSTRUCTION MEETING, THE COUNTY INSPECTOR MAY REQUIRE THE ENTRANCE TO BE PAYED TO THE EDGE OF THE RIGHT-OF-WAY PRIOR TO THE INSTALLATION OF A WASHDOWN ENTRANCE TO AVOID DAMAGE TO THE EXISTING ROADWAY.
- THE RESPONSIBLE EROSION CONTROL INDIVIDUAL IS TO ENSURE THAT ALL VEHICLES USE THIS ENTRANCE AND ARE TO BE INSPECTED AND CLEANED OF SOILS BEFORE LEAVING PROJECT, AND THAT THE ENTRANCE IS TO BE KEPT CLEAN AT ALL TIMES.



1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPE.

2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.

3. STRAW WATTLES MUST BE STABILIZED BY ATTACHING WIRE CLIPS TO THE CATCH BASIN PER MANUFACTURES SPECIFICATIONS.

4. INLET PROTECTION MUST BE REGULARLY INSPECTED BY THE EROSION CONTROL INDIMIDUAL TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.

5. SEE INLET PROTECTION NOTES STD. PLAN E-3

Department of Public Works
CLARK COUNTY
WASHINGTON
Proud part, promising future

COUNT DAMER

DATE BY

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APPROVED

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STANDARD NOTES FOR EROSION CONTROL PLAN

- 1. The Contractor shall install and maintain BMP's as shown and perform all actions necessary to prevent erosion, and control sediment from leaving the construction site Site Contractor shall comply with Clark County Code Chapter 13 .29, Article IV.
- 2. All erosion control measures shall be in—place and in working condition prior to disturbing and exposing any soil surfaces (i.e. silt fence, construction entrance, sedimentation barriers, sedimentation traps).
- 3. All erosion prevention and control BMP's shall be maintained and repaired as needed to insure continued performance of their intended function. Needed repairs shall be made as soon as practicable. They are to remain in place and operational during all phoses of construction. Construction activities shall not continue or resume until repairs to erosion control facilities are made and the facilities are functional. Any sediment leaving the site or discharging to a sensitive area shall be stopped and controlled immediately. Contaminated areas shall be cleaned and restored.
- 4. Clearing limits and work area limits shall be delineated and marked. Do not disturb more area than needed for construction requirements.
- 5. All sensitive or critical areas (wetlands, steep slopes, natural waterways), and buffers shall all be clearly delineated and clearly marked, and protected from sediment deposition.
- 6. Sediment laden runoff shall be prevented from entering all existing storm water catch basins and inlets affected by construction.
- 7. No exposed, bare soils shall remain unstabilized for more than two days during the period October 1 thru April 30 or for more than seven days during the period of May 1 through September 30. All disturbed soil surfaces shall be stabilized by a suitable application of "Best Management Practices".
- 8. Where feasible, no more than 500 feet of trench shall be open at one time. Excavated material shall be placed on the up—hill side of trenches provided it does not conflict with safety requirements.
- 9. Dewatering devices shall discharge into a sediment trap or sediment pond. No discharge shall be made to a paved street or stormwater collection system without first removing sediment.
- 10. Cut and fill slopes shall be constructed in a manner that will minimize erosion. Erosion shall be controlled and prevented by such measures as roughening the surface, installation of interceptor ditches, terracing, covering with matting, mulch or plastic sheeting. Runoff shall be prevented from entering a slope and from undercutting the base of slopes.
- 11. Any soil or debris transported onto roadways and sidewalks shall be removed. Deposits shall be completely removed by shoveling and/or sweeping. Washing shall not be utilized unless specifically approved in writing by the County.
- 12. All permanent infiltration systems shall be isolated and protected from sediment laden runoff entering to avoid risk of reducing the ability of the systems to infiltrate. Isolation and protection shall not be removed until the drainage area tributary to the system is completely stabilized.
- 13. All conveyance channels, both temporary and permanent shall be stabilized to prevent erosion of the channel. Stabilization shall extend to areas at outlets and downstream reaches vulnerable to erosion resulting from flow discharging from the channel.
- 14. If BMP's shown are utilized but are insufficient to prevent sediment from reaching water bodies, adjacent properties, or public rights—of—way; additional BMP's shall be implemented immediately to prevent further encroachment of sediment.
- 15. Stabilized areas shall be provided for employee parking and storage of construction materials. Erodeable stockpiles of earthen materials, such as topsoil, silty and clayey soils; and landscape materials, shall be covered when not being incorporated in the work. Erosion control BMP's shall be utilized as necessary to prevent sediment laden runoff from leaving or sediment being transported from these areas from vehicle activity.
- 16. All pollutants other than sediment that occur during construction shall be handled and disposed of in a manner that does not cause contamination of storm water.
- 17. The Contractor shall keep an inspection log of the condition of the erosion control facilities. Erosion control facilities shall be inspected at least weekly and after each rainfall. The inspection log shall be kept at the project site at a designated location and shall be available for review by the County. An individual that has successfully completed the County's Erosion Control Certification course shall perform inspections and maintain the
- 18. All temporary BMP's shall be removed within 30 days after final site stabilization is achieved. Trapped sediment shall be deposited and stabilized on site. Areas disturbed resulting from removal shall be permanently stabilized.
- 19. Construction shall not be considered complete and acceptable until all disturbed soil surfaces have been protected from erosion with permanent landscoping, covering with impervious surfaces, restored to original undisturbed condition or permanently stabilized.
- $20.\ \mbox{Vegetated}$ stabilization and landscaping shall be fertilized, watered and maintained to insure that growth of vegetation is established and sustained.
- 21. During dry weather construction periods the contractor shall provide project—specific dust control measures that may include: Seeding, Mulching, Motting, Woter, Tackifier, or Chemical Soil Stabilizers. The contractor shall maintain the dust control measures through dry weather periods until all disturbed areas have been stabilized. Immediately re—stabilize areas disturbed by contractor's operations or other activities (wind, water, vandalism, etc.).

NOTE:
SIGNIFICANT VARIATION AND DEGREE OF EROSION CONTROL EFFORT IS DICTATED BY WEATHER
CONDITIONS. THE DEVELOPER AND CONTRACTOR SHOULD BE PREPARED TO PROVIDE EXTRA
EROSION CONTROL PROVISIONS AND EFFORT DURING WINTER AND WET WEATHER CONDITIONS
BEYOND THAT NORMALLY REQUIRED DURING SUMMER AND DRY WEATHER CONDITIONS. FINE
GRAINED AND UNCONSOLIDATED SOILS ON SLOPING SITES MAY BECOME UNSTABLE WHEN
SUBJECT TO EXCESSIVE MOISTURE.

PRELIMINARY



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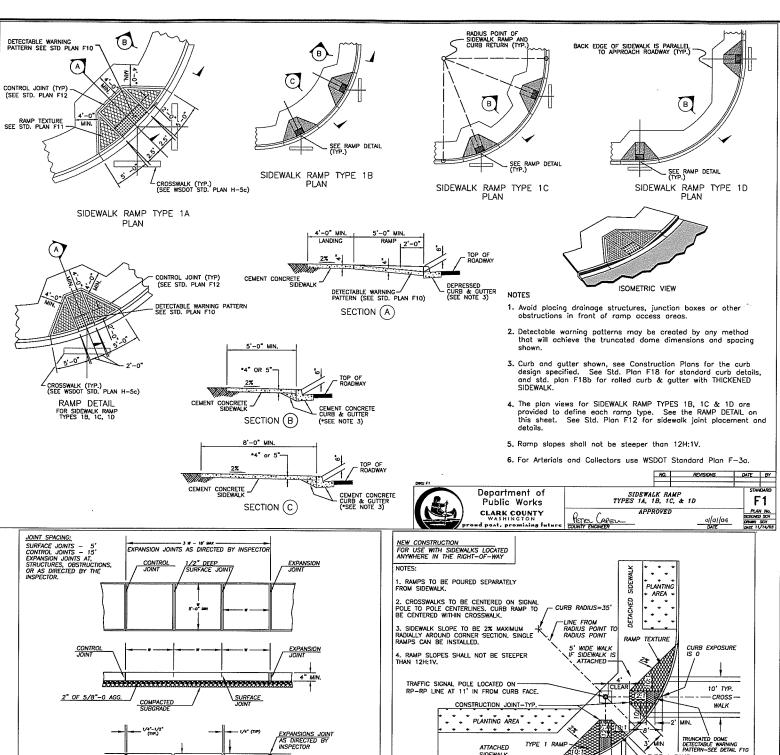
1-800-553-4344 "It's the Law"

DESIGN SECTION

NE 137TH AVE (NE FOURTH PLAIN TO NE 76

EROSION CONTROL DETAILS

Prou



CROSSWALK LINES PER STD. PLAN H-5c, OPTIONAL PATTERN

Department of

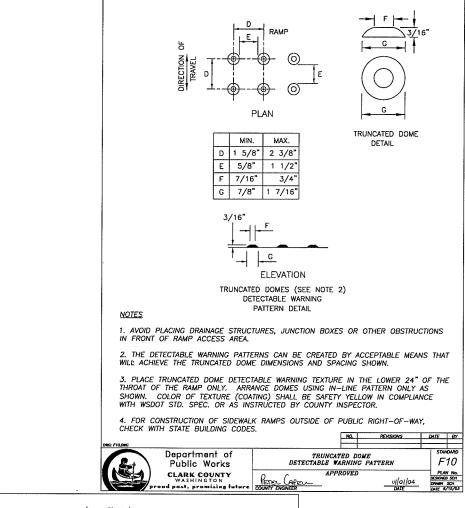
Public Works

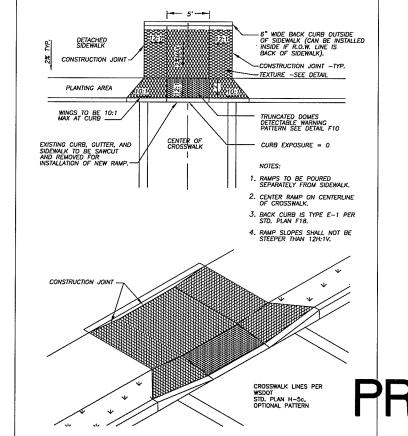
CLARK COUNTY

NO, REVISIONS DATE BY
1 TRUNCATED DOMES 6/14/03 SCH

F2

TYPE 2 RAMP





PRELIMINARY

NO. REVISIONS DATE BY
I TRUNCATED DOME PATTERN 6/14/03 SCH Department of Public Works CLARK COUNTY

2" OF 5/8"-0 AGG.

1. CONCRETE SHALL BE 3,000 PSI MIN. (CLASS 3000), 3 1/2" SLUMP (± 1")

3. ALL EXISTING EDGES SHALL BE SAWCUT. 4. NO FILLER REQUIRED FOR SURFACE JOINTS.

Public Works

CLARK COUNTY

2 FINISH SHALL BE MEDIUM BROOM PERPENDICULAR TO PEDESTRIAN TRAFFIC UNLESS OTHERWISE DIRECTED.

SIDEWALK DETAIL

F12

5. ALL JOINTS AND EDGES SHALL BE FINISHED WITH 1/4" RADIUS EDGER (3" SMOOTH FACH SIDE)

(NE FOURTH ROADWAY DI SE SIGN ш AVE37TH

H PLAIN DETAILS ERIN CTIOI \approx S ш

ENGINE <u>S</u>

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SURFACING:

- All A.C.P., shall be sow cut to provide a straight, clean edge prior to paving. The cut line shall be one continuous straight line from the outer excavation limits of manhole, valve box, etc. to manhole, valve box, etc.

 Pove with an 0.5 ft. minimum compacted depth A.C.P., or match existing or design section, whichever is greater.

- section, whichever is greater.

 Lifts for A.C.P. (Closs A) shall be 0.15 ft. minimum and 0.35 ft. maximum for non-surface lifts
 (0.25' maximum for surface lift); the temperature shall be 250 degree minimum, 350 degree maximum,
 composed to 92% of the bheoretical maximum.

 All joints shall be tocked, sealed and sanded.

 Trench shall be ploted until poved.

 Ter knajtivation installation, full lane width including turn lanes restoration shall be required or as directed by
 Clark County. For transverse installation refer to surfacing restoration of detail U6. See Section 12.20A.120.C.

- O.80 ft. minimum depth (1-1/4" minus) C.S.B.C. (W.S.D.O.T. approved material).
 Compacted to 95% of maximum density. See trench zone.
 Equivalent depth of A.T.B. may be substituted.
 For transverse or diagonal trenches in existing roadway povement, CDF (as defined in the standard specifications section 2-09.1(1)£) will be used for a minimum of 3' in depth or from 6' above the top of the pipe to the bottom of full povement section which ever is less.

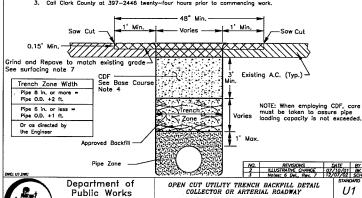
- 1. Grounds backfill as approved by local agency or W.S.D.O.T. specifications for granular backfill. Compacted to 95% of maximum density in the trench zone using Method C compaction as per Section 2-03.3(14)C.

 2. Native material may be used if approved prior to construction by Clark County.

 3. Trench zone width —— see below.

CLARK COUNTY

- Pipe zone material as specified by utility owner, and shall conform to section 9-03.12(3) WSDOT Specs.
 1.0 ft. max, from top of the pipe. 6" from top of pipe when CDF backfill used. CONDITIONS:
- A copy of the permit and requirements shall be on the job site at all times.
 The permit holder shall be responsible for all restoration and maintenance of ditches, shoulders, driveways, landscaping, etc.
 Call Clark County at 397-2446 twenty-four hours prior to commencing work.



ROADWAY SHOULDER INCLUDES LAWN AND LANDSCAPE

SHOULDER ROCK:

- 0.50 ft. minimum depth (1 1/4" minus) crushed rock. (Clark County Approved Material).
 Compacted to 95% of maximum density. See trench zone.
 Rock shall extend from E.O.P. to the back of trench at approx. .05 Ft./Ft. slope.

LAWN & LANDSCAPE AREAS:

A County approved top soil shall be placed 0.50 Ft. in depth.
 Area to be restored to match existing.

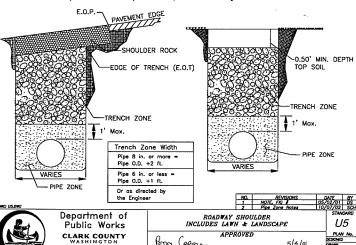
Where the distance from E.O.T. to E.O.P. is less than or equal to the depth of the trench; these conditions shall apply:

- Granular backfill as approved by local agency or W.S.D.O.T. specifications for granular backfill. Compacted to 95% of maximum density in the trench zone using Method C compaction as per Section 2-0.3.3 (14)C.
- Notive material may be used if approved prior to construction.
- 3. Trench zone width -- see below.

PIPE ZONE:

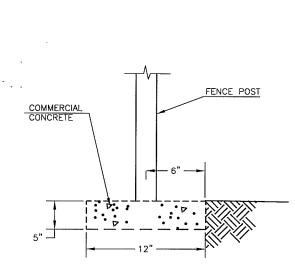
Pipe zone material as specified by utility owner, and shall conform to section 9-03.12(3) WSDOT Specs.
 1.0 ft. max. from top of the pipe.

- A copy of the permit and requirements shall be on the job site at all times.
 The permit holder shall be responsible for all restoration and maintance of ditches, shoulders, driveways, landscoping, ect.



ATTACH 2 X 4 TREATED CROSS BRACE TO 2" ID GALVANIZED PIPE WITH GALVANIZED 8'-0" POST O.C. (MAX.) BRACKET (SIMPSON PGT2-R OR EQUAL) TOP AND BOTTOM CROSS BRACES SHALL BE 6" FROM THE END OF THE PICKETS. MIDDLE BRACE SHALL BE TREATED HEMLOCK OR FIR 2 X 4 CROSS 2" ID GALVANIZED STEEL PIPE POST CENTERED ON THE PICKETS. ATTACH EACH PICKET TO CROSS BRACE WITH 2 GALVANIZED NAILS 1 x 6 NO.1 CEDAR PICKET (TYP.) 1/2" SLOPE HNSTALL 1 X 6 PICKETS VERTICAL, CROSS BRACES MAY SLOPE TO FOLLOW GRADE. PICKETS SPACED EQUALLY (%" TOP OF CONC. FOUNDATION ELEVATION WOOD FENCE SECTION GALVANIZED STEEL BRACKET - 2" ID GALVANIZED STEEL PIPE POST STREET SIDE TREATED HEMLOCK OR FIR 2 X 4 CROSS BRACE (TYP.) x 6 NO.1 CEDAR PICKET (TYP.)

WOOD FENCE DETAILS



MOWING STRIP

PRELIMINARY





ISION DIVI ENGINEERING Ω (NE FOURTH ROADWAY DE SIGN \approx Ш Z \mathcal{O} \overline{S} ш 137

NOTE:

1. A MINIMUM 3' WIDE ACCESSIBLE ROUTE SHALL BE MAINTAINED IN ALL PEDESTRAM ACCESSIBLE AREAS.

2. CONTRACTION POINTS SHALL BE PLACED ALONG SIDEWALKS IN ACCORD WITH SIDEWALK DETAIL.

ALL JOINTS SHALL BE CLEANED AND EDGED.

3. CHANGES IN LEVEL UP TO 1/4" MAY BE VERTICAL AND WITHOUT EDGE TREATMENT.

CHANGES IN LEVEL DETREEN 1/4" AND 1/4"

VERTICAL AND WITHOUT EDGE TREATMENT.
CHANGES IN LEVEL BETWEEN 1/4" AND 1/2"
SHALL BE BEVELED WITH A SLOPE NO GREATER
THAN 2:1.
4. CEMENT CONCRETE APPROACHES SHALL BE
CONSTRUCTED OF AIR—ENTRAINED LASS 3000
AND MAY BE POURED INTEGRAL WITH CURB.
5. EXISTING CURB, CUTTER, AND SIDEWALK TO BE
SAWCUT AND REMOVED FOR INSTALLATION OF
APPROACH.
6. COMMERCIAL DRIVEWAY REQUIRES REINFORCING STEEL
(6"YE" 10 CA WIPE VESSAU NIM. 3" CONTEGEN

(6"x6" 10 GA WIRE MESH) MIN. 3" COVER.

7. 3" DEPTH 3/4"-0 CRUSHED AGGREGATE BASE COMPACTED TO 95% OF MAX. DRY DENSITY.

8. SUBGRADE PREPARATION PER WSDOT STD. SPEC.

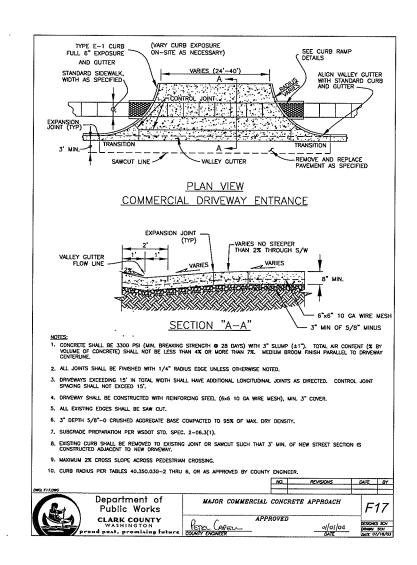
— CEMENT CONCRETE CURB AND GUTTER SECTION SHOWN (SEE STANDARD PLANS FOR OTHER CURB DESIGNS).

- 1/2" MAX (BEVEL WHERE POSSIBLE) SEE NOTE 3.

SIDEWALK

OPTIONAL APPROACH - HALF ELEVATION

PRELIMINARY



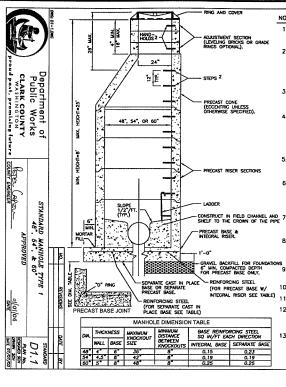


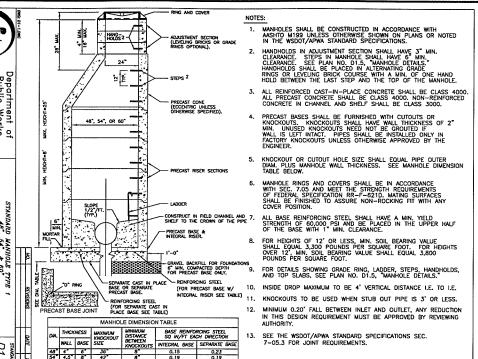


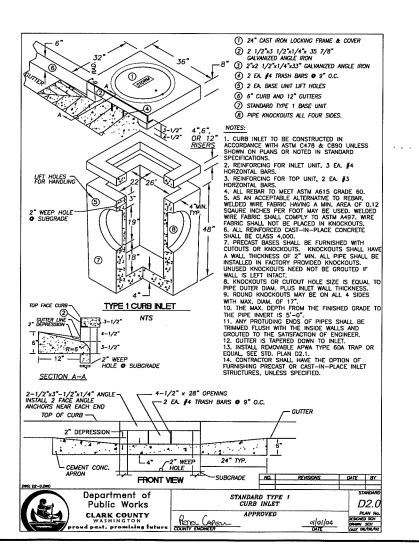
DESIGN & ENGINEERING DIVISION DESIGN SECTION

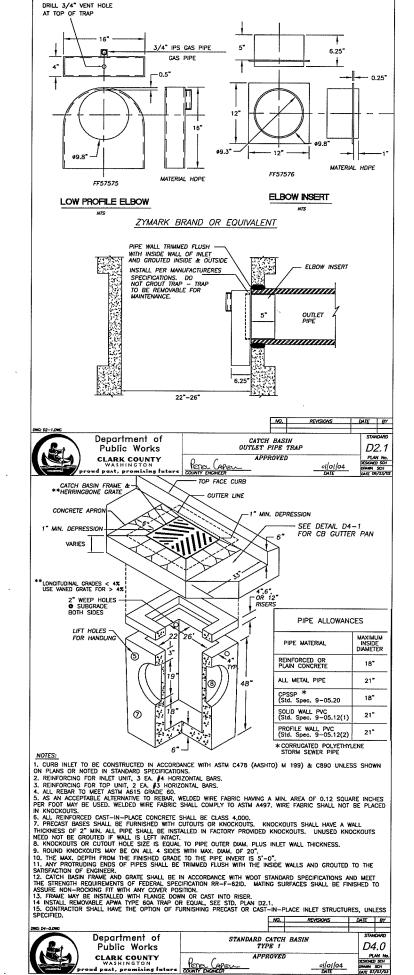
proud past, promising future

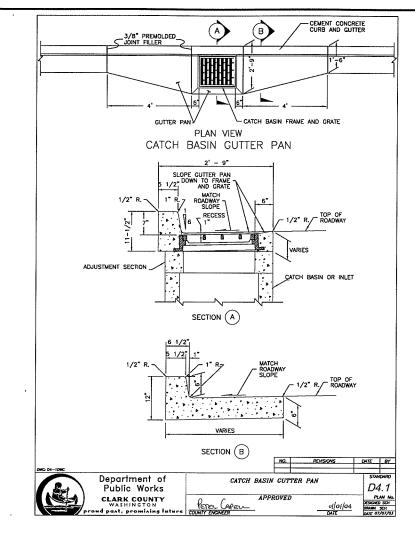
CLARK COUNTY









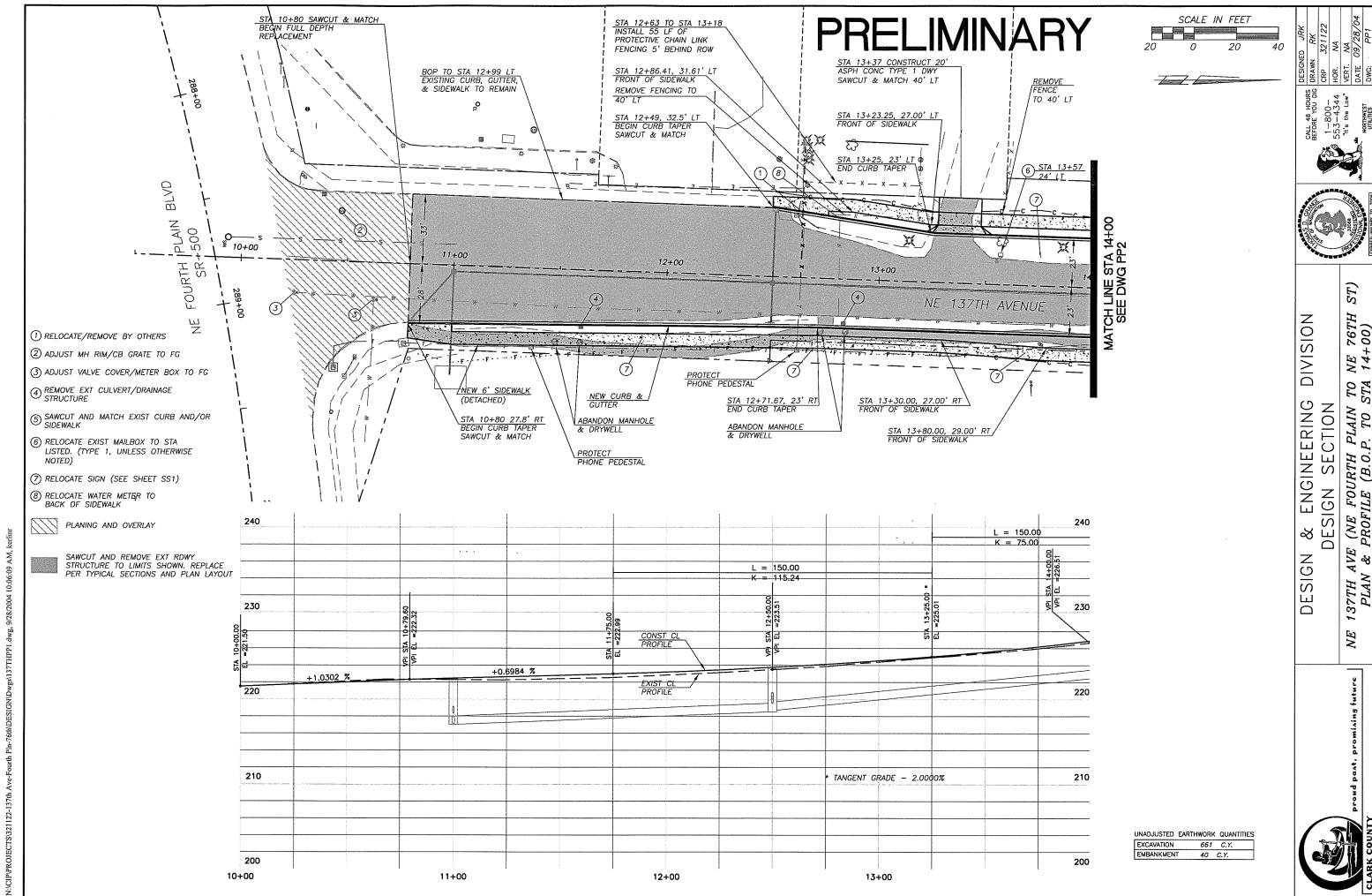


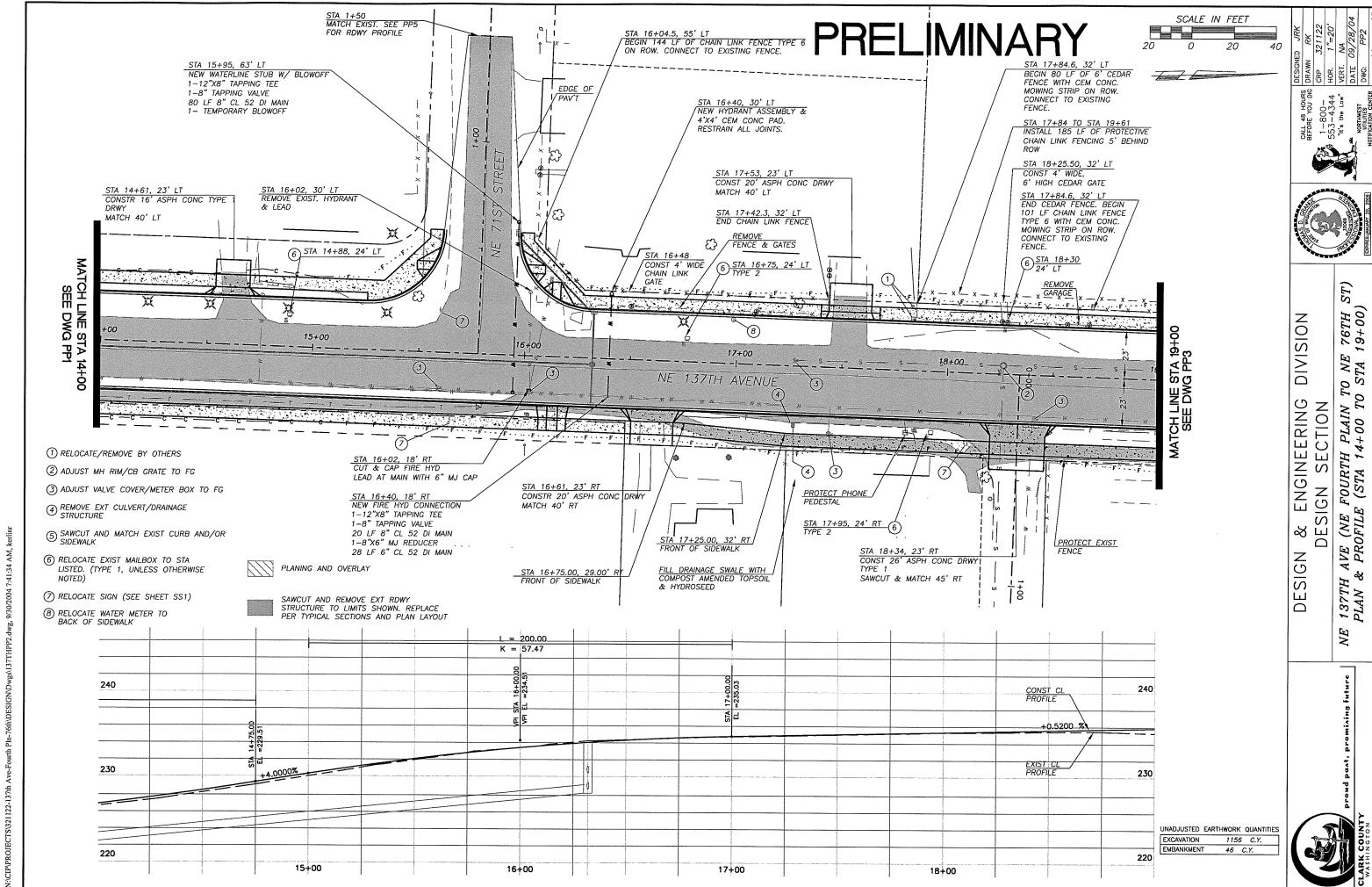


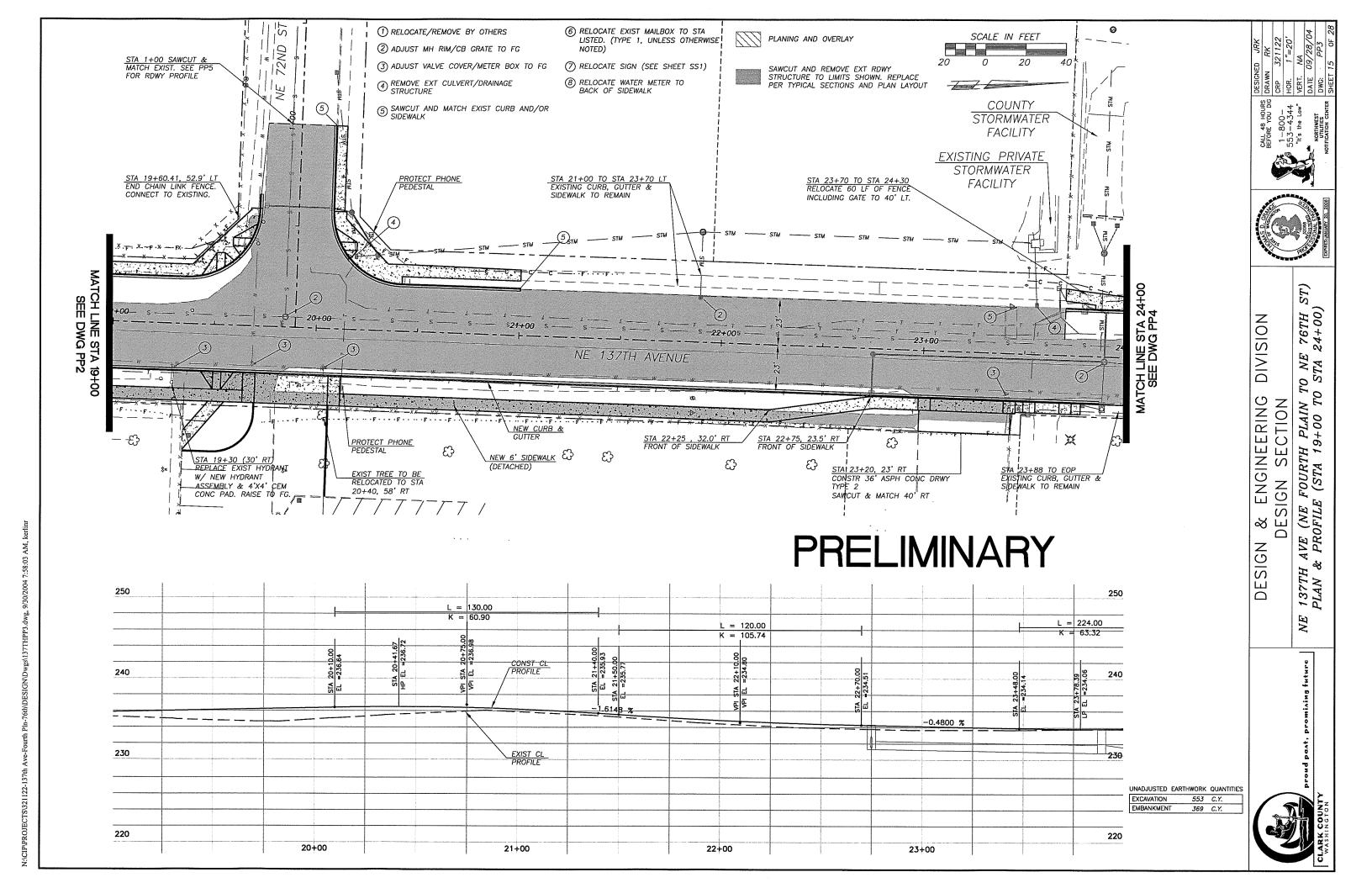
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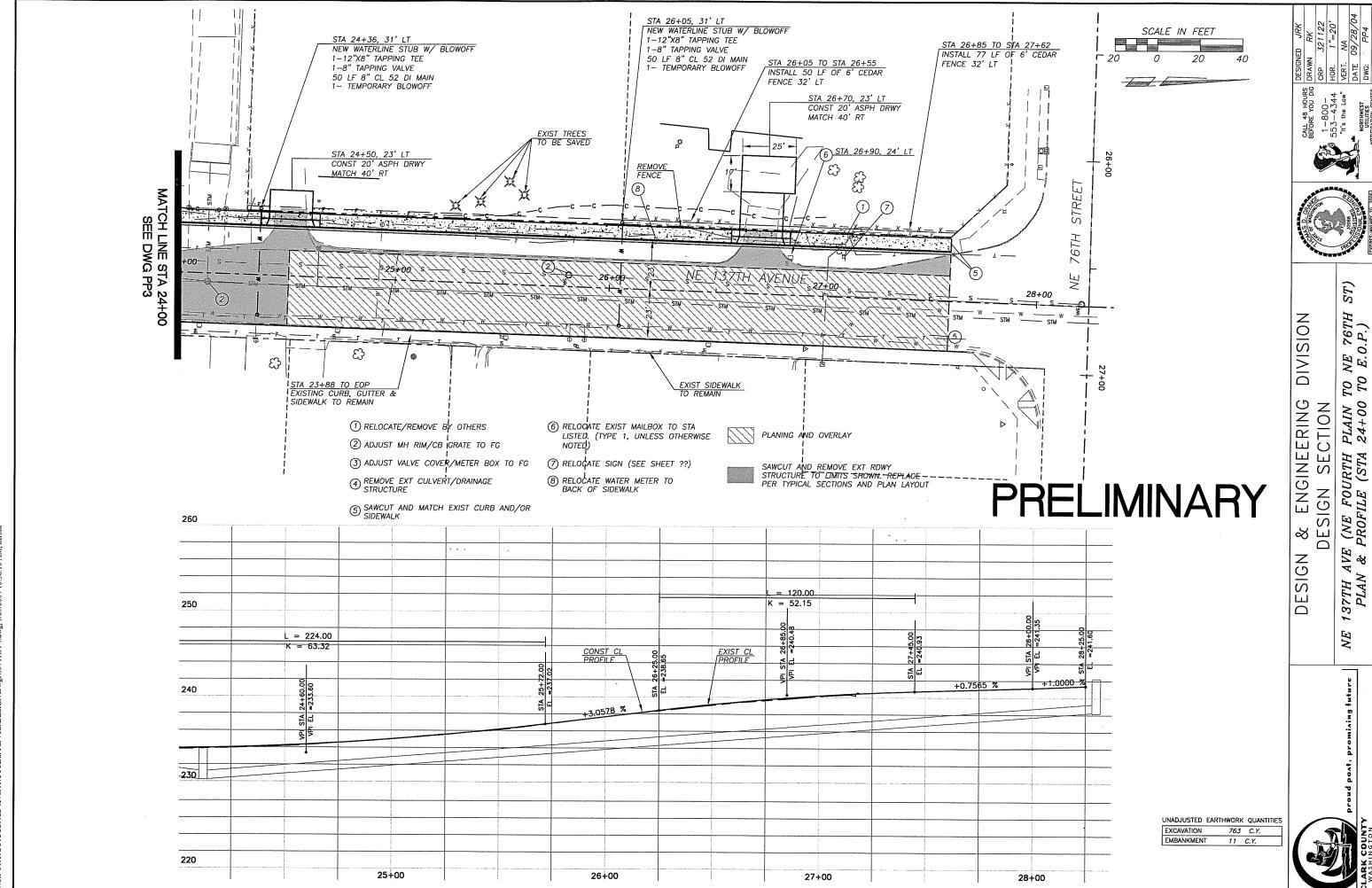
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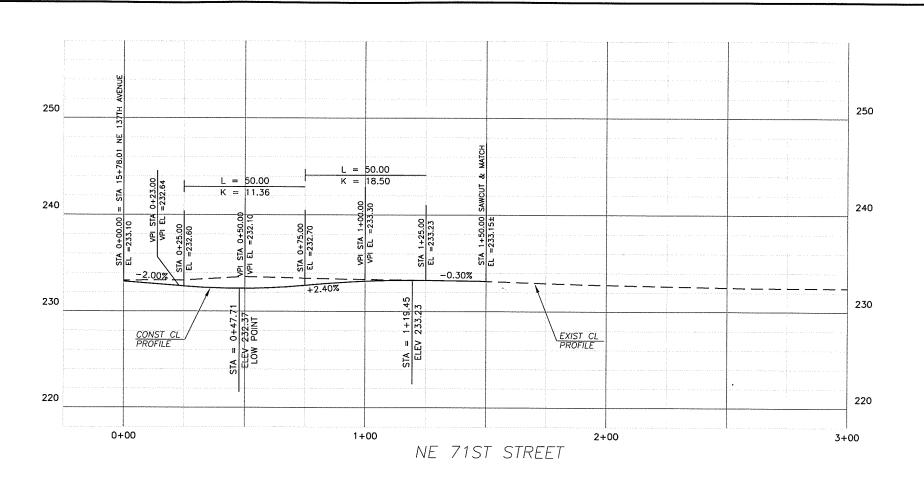
PRELIMINARY











PRELIMINARY

NE 137TH AVE (NE FOURTH PLAIN TO NE 76TH ST) PLAN & PROFILE (NE 71ST STREET/NE 72ND STREET)

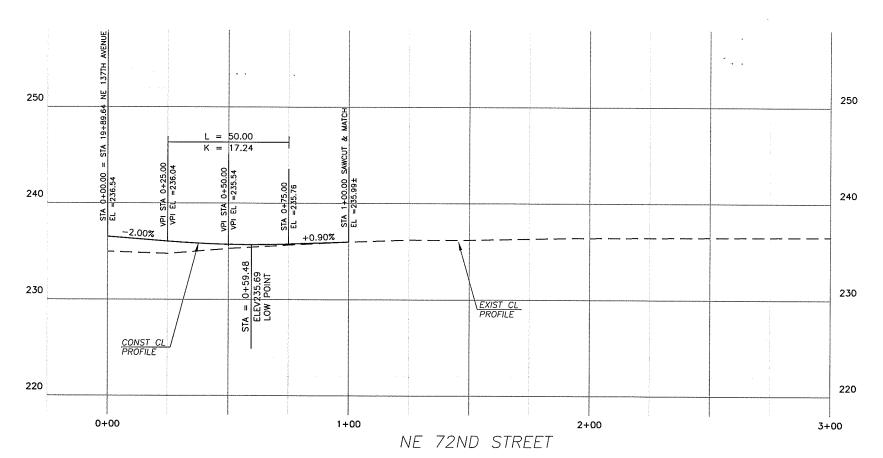
DIVISION

ENGINEERING SIGN SECTION

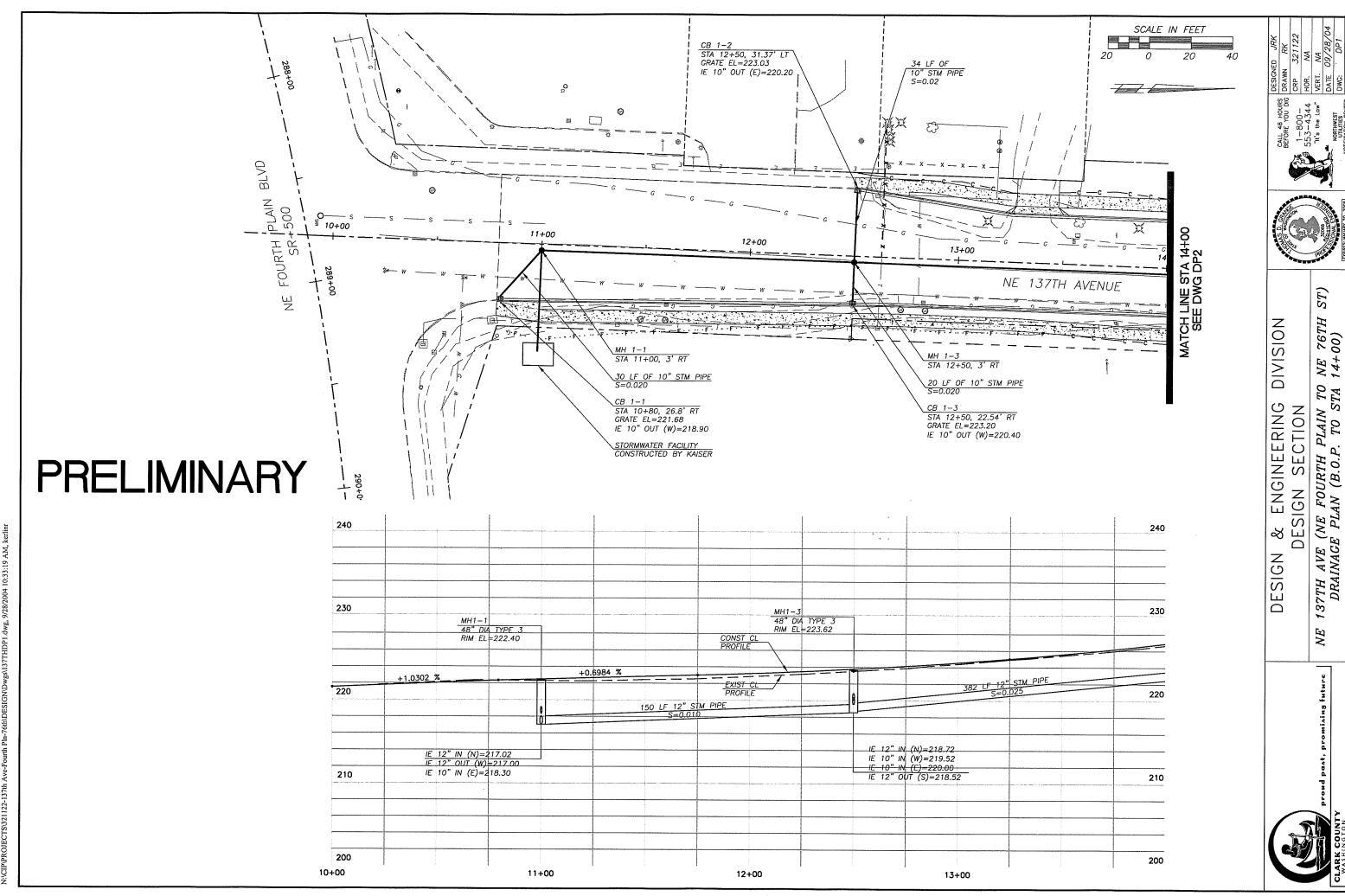
DESIGN

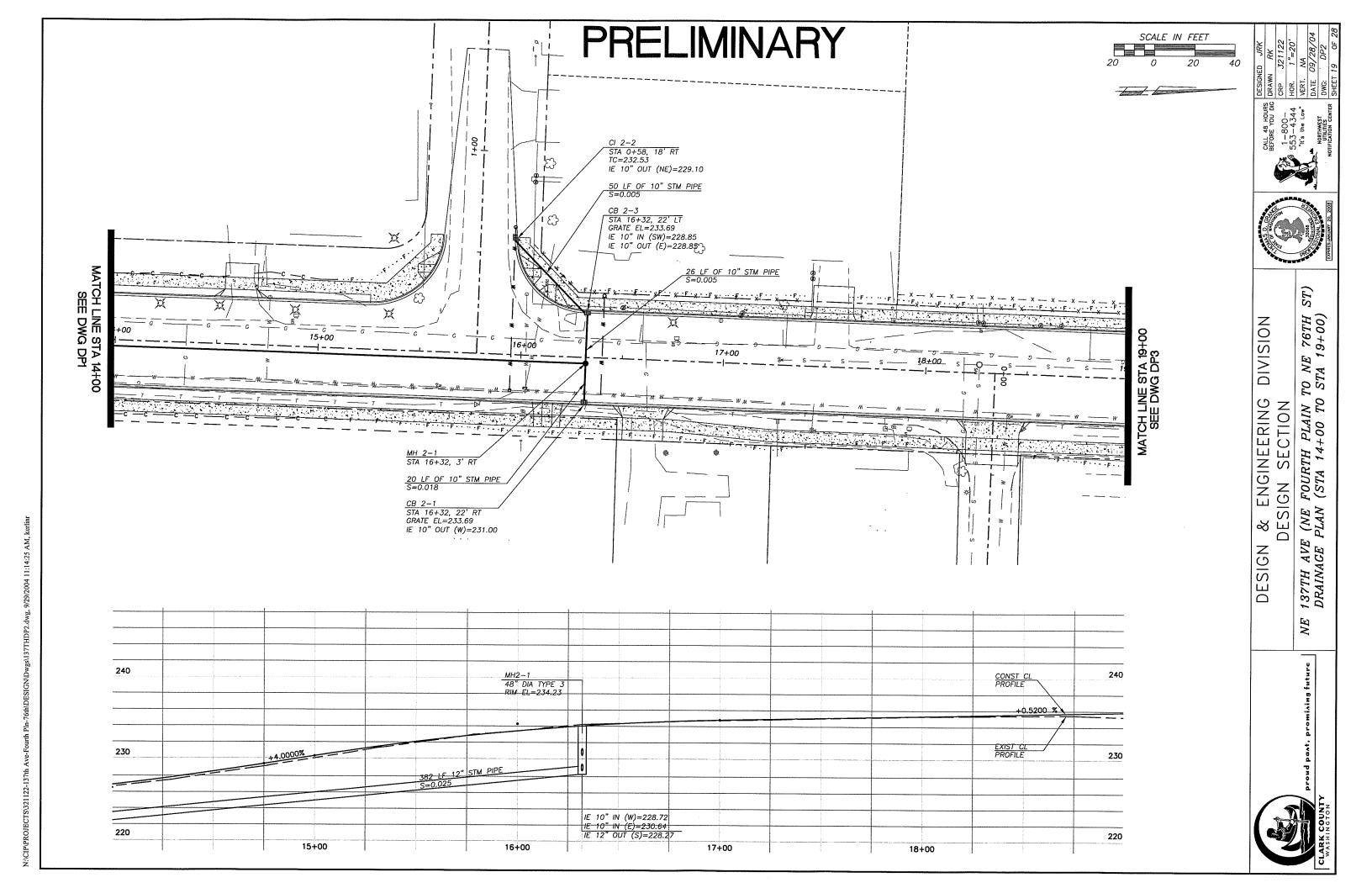
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DESIGN



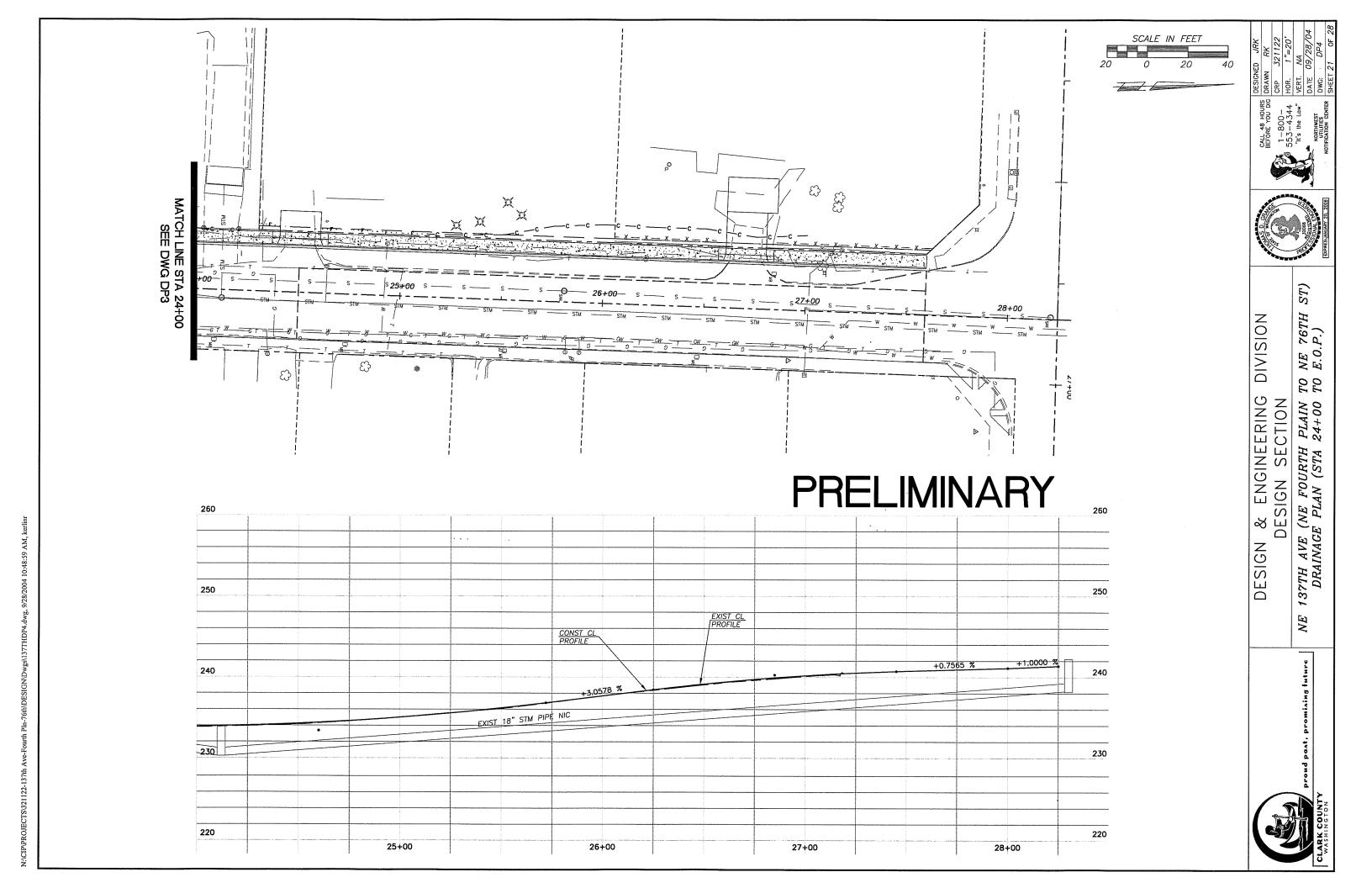


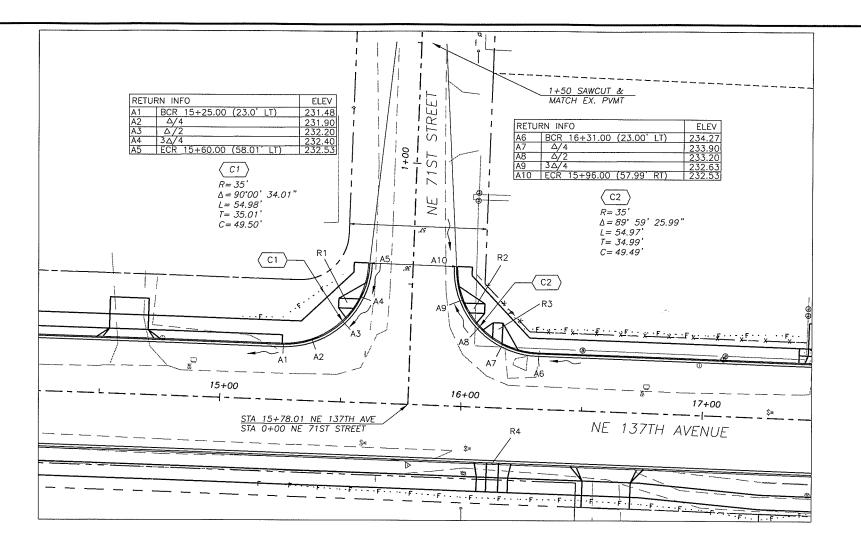


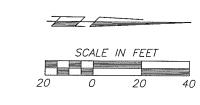




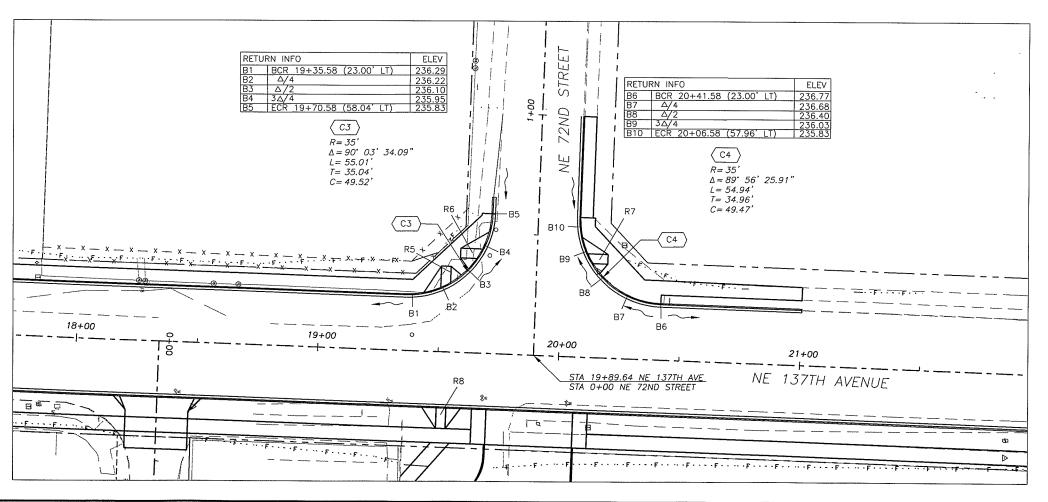








RAMP #	Ç AT C	CURB FACE	& AT END	OF RAMP
	STATION	OFFSET	STATION	OFFSET
R1	15+55.59	41.00' LT	15+47.71	41.00' LT
R2	16+00.41	41.00' LT	16+08,29	41.00' LT
R3	16+13.98	27.42' LT	16+13.98	35.31' LT
R4	16+13.98	23.00' RT	16+13.98	35.00' RT
R5	19+52.04	27.11' LT	19+52.04	35.53' LT
R6	19+66.28	41.19' LT	19+57.72	41.22' LT
R7	20+10.97	41.03' LT	20+18.87	41.00' LT
R8	19+52.04	23.00' RT	19+52.04	38,00' RT



PRELIMINARY

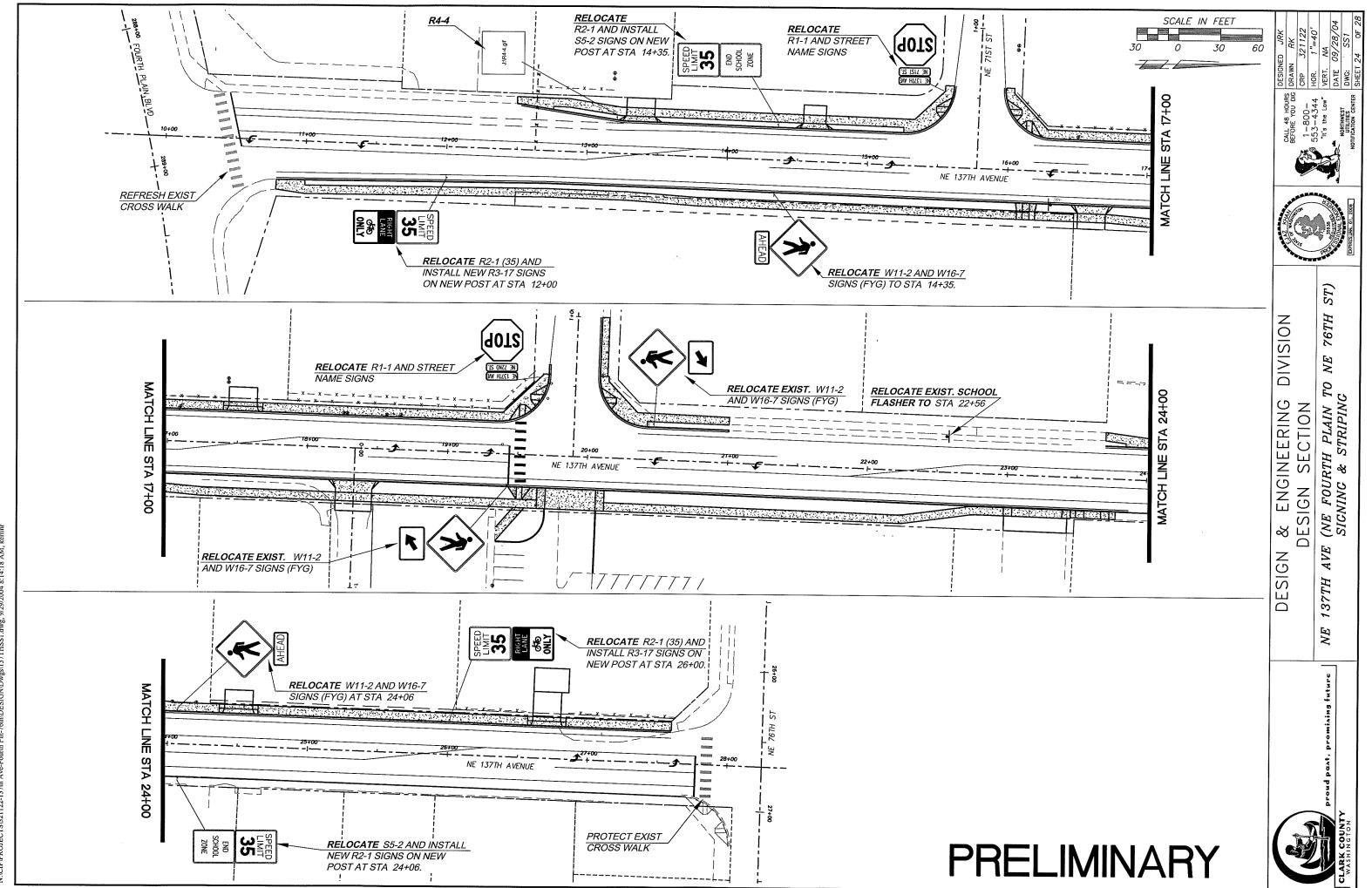


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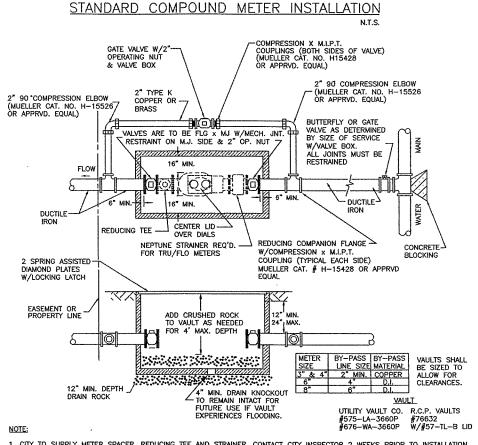
CALL 48 HOURS -BEFORE YOU DIG

proud past, promising future K COUNTY

NE



ACIPAPROJECTS321122-137th Ave-Fourth Pin-76th/DESIGN/Dwgs\137THSSI.dwg. 9/29/2004 8:14:18 AM. kerlinr



- 1. CITY TO SUPPLY METER SPACER, REDUCING TEE AND STRAINER. CONTACT CITY INSPECTOR 2 WEEKS PRIOR TO INSTALLATION
- 2. TEN PIPE DIAMETERS OF STRAIGHT PIPE REQ'D. IN & OUT OF METER. (IF USING 6" PIPE, NO BENDS ALLOWED WITHIN 5" OF THE METER IN EITHER DIRECTION. IE: 6" x 10 = 60")
- 3. CONTRACTOR SHALL USE APPROPRIATE METHODS TO ENSURE COPPER PIPE, FITTINGS AND JOINTS WILL REMAIN LEAK-TIGHT

N.T.S.

2" GALV. NIPPLE

DRAIN

2" MUELLER CORP STOP_ (H-10046 OR EQUAL)

2"X1" REDUCER 1" 90" GALV. ELBOW OR STREET ELBOW

/4" STL. RING

FOR COVER

2" COMBINATION AIR RELEASE VALVE (APCO NO 145-C OR APPRVD. EQUAL)

2" BRASS OR

TYPE K COPPER TUBING

SWING JOINT USE ONLY BRASS

2" TAPPING

SADDLE

NIPPLES AND

4" BRASS NIPPLE

COMBINATION AIR RELEASE VALVE

& STAKED IN FIELD

HOLES

-SALEM IRON WORKS COVER NO. A2974 OR APPRVD. EQUAL

W/4 1/2" VENT HOLES ON

4. ALL METERS SHALL BE INSTALLED BY THE CITY OF VANCOUVER PER VMC 14.04.170(B) CONTRACTOR TO INSTALL TEMP. SPACER AS PER NOTE 1.

2-GALV. 90° ELBOWS

5. METER BOX IS NOT ALLOWED IN WITHOUT PRIOR APPROVAL.

1" VENT PIPE ______ SOLDERED SCREEN ON SOLDER SOCKET END

THE PROPERTY.

24" T&G-

MANHOLE

(TYP.)

BRASS NIPPLE

1"X24" GALV. NIPPLE

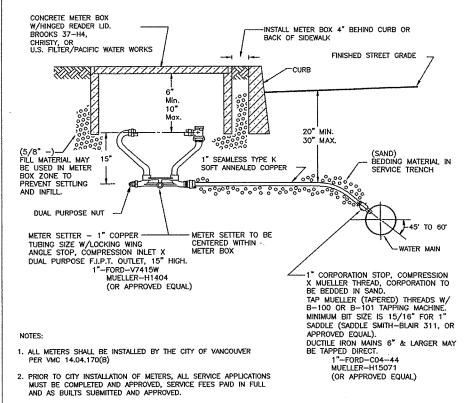
VALVE BOX

GROUT IN PIPE-

W/NIPPLE

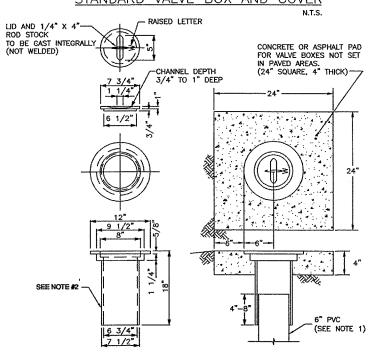
2-90° GALV. ELBOWS

<u> STANDARD WATER SERVICE – 1"</u>



- 3. CONTRACTOR SHALL CONTACT CITY CONSTRUCTION MANAGERS OFFICE (696-8050) 48 HRS. PRIOR TO INSTALLING ANY WATER SERVICE CONNECTIONS.
- 4. METERS WILL NOT BE SET BY THE CITY PRIOR TO DISINFECTION OF THE MAIN AND SERVICE, AND, PRIOR TO A SUCCESSFUL BACTERIOLOGICAL TEST.
- 5. WATER SERVICES SHALL BE PRESSURE TESTED ALONG WITH THE MAIN
- 6. DURING THE PRESSURE TEST, THE MAIN SHALL BE OPEN TO INSPECTION AT ALL CORPORATIONS.
- 7. METER BOX IS NOT ALLOWED IN HARD SURFACE AREAS WITHOUT PRIOR APPROVAL

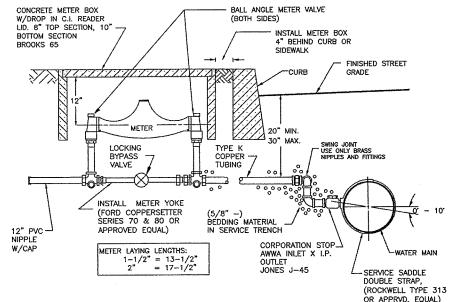
STANDARD VALVE BOX AND COVER



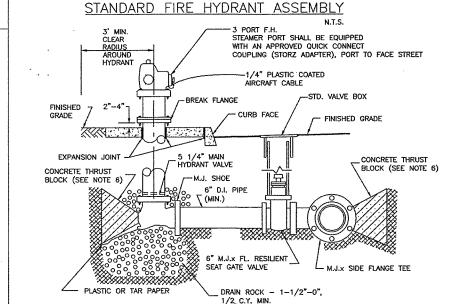
NOTES:

- 1. EXTENSIONS SHALL BE 6" ASTM D 3034 SDR 35 PVC PIPE (ONE PIECE)
- 2. U.S. FILTER/PACIFIC WATER WORKS NO. 910 OR EQUAL
- 3. THERE SHALL BE 1/2" CLEARANCE UNDER THE PIN CAST INTO THE LID.

STANDARD WATER SERVICE - 1 1/2" & 2



- 1. ALL METERS SHALL BE INSTALLED BY THE CITY OF VANCOUVER PER VMC 14.04.170(B)
- 2. PRIOR TO CITY INSTALLATION OF METERS, ALL SERVICE APPLICATIONS MUST BE COMPLETED AND APPROVED. SERVICE FEES PAID IN FULL AND AS-BUILTS SUBMITTED AND APPROVED.
- CONTRACTOR SHALL CONTACT CITY CONSTRUCTION MANAGER'S OFFICE (360)696-8050 48 HOURS PRIOR TO INSTALLING ANY WATER SERVICE CONNECTIONS.
- METERS WILL NOT BE SET BY THE CITY PRIOR TO DISINFECTION OF THE MAIN AND SERVICE, AND PRIOR TO A SUCCESSFUL BACTERIOLOGICAL TEST.
- 5. WATER SERVICES SHALL BE PRESSURE TESTED ALONG WITH THE MAIN.
- 6. DURING THE PRESSURE TEST, THE MAIN SHALL BE OPEN FOR INSPECTION OF ALL CORPORATION STOPS
- 7. USE 1-7/8" BIT FOR ALL 2" SADDLE TAPS AND 1-3/8" BIT FOR 1-1/2" SADDLE TAPS
- 8. METER BOX IS NOT ALLOWED IN HARD SURFACED AREAS WITHOUT PRIOR APPROVAL



- FIRE HYDRANT INSTALLATIONS SHALL BE APPROVED BY THE CITY INSPECTOR PRIOR TO BACKFILLING.
- 2. FIRE HYDRANT LOCATIONS SHALL BE AS SHOWN ON THE PLANS, FIRE HYDRANTS SHALL NOT BE SET UNTIL LOCATION AND DEPTH ARE APPROVED BY THE CITY.
- 3. FIRE HYDRANT STANDARD BURY IS 4' UNLESS OTHERWISE NOTED ON THE PLANS.
- 4. A 4'x4'x4" CONCRETE PAD SHALL BE CENTERED AROUND THE FIRE HYDRANT.
- 5. CONCRETE PAD SHALL BE PLACED FLUSH WIBACK OF CURB OR SIDEWALK. EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN THE CONCRETE PAD AND CURB/SIDEWALK.
- 6. IN LIEU OF CONCRETE THRUST BLOCK ALLOWABLE JOINT RESTRAINT SYSTEMS (SEE SHEET 2) MAY BE USED FOR INSTALLATIONS OF NOT MORE THAN 18'.
 (1 PIPE LENGTH)
- 7. FIRE HYDRANTS SHALL BE FACTORY PAINTED WITH SAFETY YELLOW HIGH GLOSS EQUIPMENT
- 8, FIRE HYDRANT MAINS SHALL BE 8" MIN., A 6" MAIN CAN BE USED FOR A DEAD-END RUN OF LESS THAN 50" TO A HYDRANT SUBJECT TO ADEQUATE FIRE FLOW.

CALL
2 BUSINESS D
BEFORE YOU
-800-553--"It's the Langer

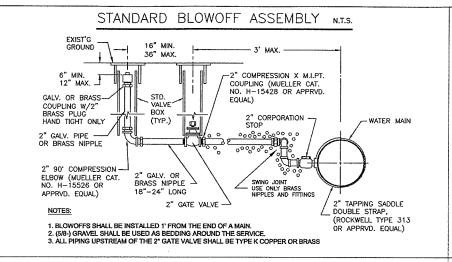
ENGINEERING S WATER ENGIN P.O. BOX 1

DETAIL

LINE WATER SHEET 1

STANDARD

SHEET



-3'-0" MAX -EXIST'G. GROUND RYKKKK 6" MIN. 12" MAY VALVE GALV. OR BRASS BOX -(TYP.) COUPLING W/2" SWING JOINT USE ONLY BRASS NIPPLES AND FITTINGS BRASS PLUG - 2" GATE VALE HAND TIGHT ONLY 2" GALV. PIPE OR BRASS NIPPLE 2" CORPORATION 2" 90' COMPRESSION ---2" BRASS OR 2" GALV. OR BRASS NIPPLE -ELBOW (MUELLER CAT. NO. H-15526 OR TYPE K COPPER 18"-24" LONG APPRVD, EQUAL) 2" COMPRESSION X M.I.P.T. 2" TAPPING SADDLE-COUPLING (MUELLER CAT. NO. H-15428 OR APPRVD. DOUBLE STRAP (ROCKWELL TYPE 313 EQUAL). OR APPRVD, EQUAL) - WATER MAIN

STANDARD MANUAL AIR RELEASE VALVE N.T.S.

STANDARD TEMPORARY BLOWOFF ASSEMBLY N.T.S. FIGURE "A" XXX SQUARE HEAD PLUG-П MAIN DIAMETER BLOW-OFF WITH COUPLING DIAMETER TIGHT ONLY 3"-6" PUSH ON JOINT PIPE <12" 2" MINIMUM ONE FULL PIPE SECTION GALV. PIPE BELL END ONLY ≥12" 4" MINIMUM -STANDARD-VALVE BOX NO. 910 POUR THRUST BLOCK AGAINST UNDISTURBED SOIL. USE THE BEARING AREA OF A TEE MATCHING THE SIZE OF MAIN (USE THE STANDARD THRUST GALV. PIPE BLOCK DETAIL FOR REFERENCE) SEE FIG."A" FOR DIA. -- PUSH ON JOINT PLUG RESILIENT SEAT OR. WEDGE GATE VALVE SIZE OF BLOWOFF DETERMINED BY SIZE AND LENGTH OF PIPE. - 4"X4" NEW CEDAR BLOCK FACH SIDE OF PIPE AGAINST PLUG & CONC. BLOCKING. 8" & GREATER USE TREATED 12"X12" TIES. STANDARD NOTES:

STANDARD WATER PIPE BEDDING & BACKFILI TRENCH DETAIL N.T.S. THIS ZONE OF THE TRENCH SECTION, COVER PIPE TO SEE CITY/COUNTY RIGHT OF WAY PERMIT OR STANDARD STREET REPAIR DETAIL FOR NON-HARD SURFACE AREAS, MATCH EXISTING GRAYEL OR SEEDED LAWN OR REFER TO ≅ P F TRENCH BACKFILL MECHANICALLY COMPACTED 95% IN LIFTS NOT EXCEEDING 6". BANK RUN GRAVEL SHALL BE IN ACCORDANCE WITH MOST CURRENT EDITION OF THE PIPE W.S.D.O.T. /A.P.W.A. STANDARD SPECIFICATIONS. (SECTION 9-03.19) PIPE BEDDING IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE W.S.D.O.T./A.P.W.A. SPECIFICATION '-0" PIPE O.D. (7-10.3(9))

GENERAL:

Materials and construction methods shall be in conformance with the most current version of the STANDARD SPECIFICATIONS for ROAD, BRIDGE & MUNICIPAL CONSTRUCTION" as prepared by Washington State Department of Transportation and the Washington State Chapter of the APWA, except as noted herein. All references to American Water Works Association (AWWA) standards shall mean their latest revision. Operation of, or connection, to existing city water facilities shall only be performed under the observation of authorized City personnel.

DUCTILE IRON PIPE:

All water main pipe furnished shall be new ductile Iron (DI) pipe conforming to the requirements of AWWA C151. Pipe sizes 12 inch and smaller shall be Class 52 and pipe 14 inch and larger shall be Class 51 or Pressure Class 350, unless otherwise noted on the plans

All pipe shall be furnished in 18 to 20 foot lengths and shall be cement lined per AWWA C104

All rubber gasket joints for ductile iron shall conform to the requirements of

DUCTILE IRON FITTINGS:

All fittings shall conform to the requirements of AWWA C110 or C153. Fittings shall be of the size, type and type of joint as called for on the plans. All fittings shall have a pressure rating 250 psi minimum. All fittings shall be ductile

iron unless approved by the City. All ductile iron fittings shall be cement lined.

All compact fittings shall be DI, cement lined, and be pressure rated to 350 psi. All rubber gasket joints for ductile iron fittings shall conform to the requirements of AWWA C111.

All reducers 6 inch and larger shall be restrained.

All vertical elbow installations shall be engineered and calculations submitted with plans to the City's Engineering Division for approval.

Bolts for buried flanged fittings shall be galvanized or zinc-cadmium plated and coated with 2 coats of bitumastic after installation. Bolts for mechanical joints shall be NSS Corten steel or Ductile iron only.

No Flg x Flg fittings allowed, except compound meter installation, DCVA and

RESTRAINED JOINT PIPE:

All Restrained Joint Pipe, as called for on the plans, and shall be either TR Flex by US Pipe, LoK Ring by American Pipe or approved equal.

ALLOWABLE JOINT RESTRAINT SYSTEMS:

On water main fittings and valves 12 inch dia, and smaller, mechanical joint restraining glands, Megalug brand or approved equal may be used in lieu of thrust blocks. See "Design Requirements" section 2-1.11 regarding the number of joints adjacent to a fitting that must be restrained. The min, working press. rating of restrained joint systems shall be 350 psi. Restraining gaskets may be used where thrust restraint is req'd. for push-on joint (Tyton) pipe, 12 inch or smaller. Restraining gaskets shall be US Field Lok or approved equal and

installed as per manufacturer's written instructions. Tie rods as joint restraint shall not be allowed.

Resilient-seated gate valves may be used for valve installations of 8 inch and smaller and shall be used on all fire hydrant and fire protection service Resilient-seated gate valves shall be conform to AWWA C509 and shall be epoxy coated on the inside.

Butterfly valves may be used for installations of 6 inch and 8 inch, except for hydrant and fire protection.

utterfly valves shall be used for all valve installations of 10 inch and larger. Butterfly valves shall conform to AWWA C504 and shall be class 150-B with short body.

Butterfly valves shall be required to have a minimum of 28 turns to move fully open to fully closed. The operator shall be mounted directly on the valve with no exposed or external couplings. Units shall be fully gasketed and grease packed. Valves shall be installed with the operator on the side of the pipe nearest the road centerline. All valves shall be furnished with an underground manual (AWWA 2 inch square) operator opening with a counterclockwise rotation, Install 422 is also approved.

exceed 18 inches No Fig x Fig valves allowed.

VALVE BOXES:

Valve boxes shall be Pattern No. 910, cast iron or approved equal. Valve box extensions shall be one piece and constructed of 6" ASTM D 3034 SDR 35 PVC

Valve boxes not set in paved areas, shall be set in a concrete or asphalt pad. (24 inches square, 4 inches thick)

STANDARD AIR RELEASE VALVES:

Manual and combination air release valves are to be furnished as called for in the plans. Valves shall be of the size indicated and shall be suitable for working pressure of 150 p.s.i.

All air release valves shall be installed at the crest of pipe runs. Valves shall be APCO No. 145C or approved equal.

STANDARD BLOWOFF ASSEMBLY:

Standard blowoff assemblies are to be placed 1 foot from the end of a dead end All hydrants shall be 3 port with (2) 2-1/2 inch hose nozzles with national main, when the main will not be extended. Standard blowoff assemblies shall be placed at low points in the main, as indicated in the plans, to allow for main

STANDARD TEMPORARY BLOWOFF ASSEMBLY:

Temporary construction blowoff assemblies shall be placed on the end of water mains that will be extended, or connected to at a later date.

TAPPING SLEEVES:

Tapping sleeves shall be rated at 150 p.s.i. working pressure with ANSI/AWWA C207 Class D 150 pound flanges or equivalent stainless steel pattern. All sleeves shall be designated by the manufacturer as suitable for the service proposed. All fabricated steel tapping sleeves shall have fusion-applied epoxy

coating. All stainless steel tapping sleeves shall have stainless steel nuts and

All bolts for the sleeve body shall be the drop-in type, not welded. All nuts and bolts shall be stainless steel (with nuts or bolts treated to prevent galling) or high-strength, low alloy steel bolts with the steel meeting ANSI/AWWA C111/A21.11 specifications. After a tap is made, all exposed areas of the pipe and sleeve shall be coated with either bitumastic coating or Brown primer and Frenton #1 wax or approved equal

Tapping sleeve gaskets shall be NSF approved for potable water. Sleeves shall be tested, on the pipe, at 150 p.s.i. for 15 minutes with no pressure drop prior to making the tap.

All sleeves shall have a test outlet and plug.

Concrete blocking for sleeves shall be the same as required for an equal sized

Sleeves furnished for ductile iron pipe taps, reduced outlet taps on steel pipe, or reduced outlet taps on cast iron pipe larger than 12 inch, shall be fabricated steel with outlet gasket. JCM 412, Dresser style 610, Smith-Blair 622, Romac FTS420, Ford FTSC or approved equal. For reduced outlet taps on steel, JCM

the operator nut such that the depth from finish grade to the operator nut will not Size on size taps on steel pipe shall not be allowed.

Tapping sleeves furnished for taps on cast iron 12 inch and smaller, or taps on asbestos cement pipe, shall be stainless steel with full circumferential gasket: Romac SST III, JCM 432, Smith-Blair 664/5, Dresser 630, Ford FTSS or approved equal

Tapping sleeves for pipes not listed above must be approved by the City

TAPPING VALVES:

the tap.

Tapping valves shall have the same construction as specified for gate valves. Inlet end of valve shall be flanged and outlet end shall be mechanical joint. Tapping valves shall be supported by an 8"x8" concrete block prior to making

Tapping sleeves and valves shall be used only when specifically called for on

STANDARD FIRE HYDRANT ASSEMBLY: All fire hydrants shall conform to AWWA standard specifications (C-502) for fire

hydrants All hydrants shall be of the latest design that the manufacturer is producing.

standard fire hose coupling screw thread, 7-1/2 threads per inch, and (1) 4-1/2 inch steamer nozzle with storz quick connect fitting or equal.

Quick connect coupling: Aluminum alloy hydrant adapters shall be 5 inches and secured to steamer nozzle if adapter is threaded on steamer nozzle. Each unit shall have 1/4 inch #20 thread stainless steel set screws for permanently securing adapters to hydrant. Each unit will have a blind cap with plastic coated aircraft cable attaching it to the hydrant steamer post. Facing on the adapter shall be metal and not rubber gasketing to avert sticking during freezing weather conditions. The blind cap shall fit the adapter tight enough so that it cannot be removed without a spanner wrench.

All hydrant nozzie caps must be installed with gaskets.

All hydrants shall have 'O' ring seals on the operating stem. All working parts shall be of bronze and all 'O' ring surfaces shall be rust-free material. Th

0.8 1.4 0.5 0.2

SOIL BEARING = 2000 LB/FT 2

HORIZ. BENDS

compression hydrant operating threads shall be lubricated and shall be 'O' ring

sealed from water, moisture and foreign matter. The operating nut shall be

All hydrants shall be constructed with mechanical joint connections and

unit from freezing. The barrel shall be a minimum 7 inches LD, and of such

length as to be suitable for installation with connections to piping. Minimum

through the top of the hydrant without the necessity of digging. All hydrants shave the interior and exterior prepared and coated or painted per AWWA

standard C502. The exterior of the barrel shall be factory painted safety yellow.

The storz adapter shall not be painted. Tie rods in lieu of thrust blocks are no

The existing road surface shall be cut in a neat line by saw cutting or wheel

Trench backfill shall be according to the backfill section, shown on the plans

Placement of backfill shall be brought up to substantially the same rate on both

sides of the pipe and care shall be taken so that the pipe is not floated or

trench materials so as to do the least damage to adjacent lawns, gardens

shrubbery, trees or fences, regardless of the ownership of these areas. All

excavated materials shall be removed from these areas, and these surfaces

specified. All existing drainage ditches and culverts shall be reopened and

graded, and original drainage restored. All damaged irrigation, house drainage

pipe, drain tiles, sewer laterals and culverts shall be repaired or replaced. All

clearing, grubbing and stripping shall be performed in advance of excavation

operations. All weeds, roots, trash, debris and similar objectionable materials

shall be removed from excavation areas. All asphalt rubble, rocks, trash or

debris shall be hauled away. Asphalt pavement shall be neatly saw-cut at

The inspector may conduct periodic testing of backfill compaction, using a

nuclear densometer, at intervals of his choosing. The contractor shall provide

1. For non-granular materials - Method of test for compaction control of non-

granular materials (WSDOT Test Method No. 609)

2. For granular materials - Method of test for compaction control of granular

3. Field moisture and density of backfill material shall be determined by the

designated limits and shall be removed and hauled away.

safe trench conditions at all times for testing any depth.

materials (WSDOT Test Method No. 606)

density shall be by the following methods:

Nuclear Moisture/Density Gauge.

Compaction control tests to determine optimum moisture con

COMPACTION OF BACKFILL:

shall be left in a condition equivalent to or better than their original condition and

free from all rocks, gravel, boulders or foreign material. Replace topsoil areas as

displaced. During construction, the contractor shall stockpile the excavated

approved joint restraint, and will not be allowed.

and/or the utility permit.

by the contractor

TRENCH EXCAVATION, BEDDING AND BACKFILL:

barrel length shall be 28-1/4 inches. All working parts shall be removable

The center of the lowest port shall be at least 17 inches from the ground bury

BEARING AREA S.F. VOL. OF BLOCKING C.F. LENGTH OF BLOCKING

29.9 42.2 22.9 11.7

STANDARD THRUST BLOCK N.T.S.

NOTES:

1. ALL BLOCKING SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL

2. ALL CONCRETE BLOCKING SHALL BE POURED IN PLACE WITHOUT DIRECT CONTACT TO PIPE, FITTINGS OR FLANCES.

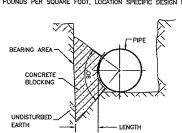
15 LB. ASPHALT-IMPREGNATED FELT, OR EQUIVALENT AS APPROVED BY THE INSPECTIOR, SHALL BE PLACED BETWEEN THE CONCRETE AND PIPE, FITTINGS OR FLANCES.

LAYOUT TO BE APPROVED BY THE INSPECTOR PRIOR TO AND AFTER CONCRETE POUR.

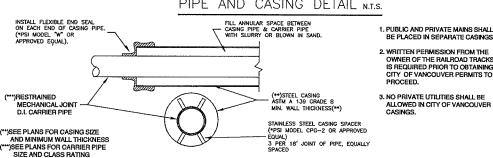
CONCRETE FOR ALL BLOCKING SHALL HAVE A 28-DAY MINIMUM COMPRESSIVE STRENGTH OF 2,300 P.S.I.

5. THIS CHART IS NOT APPLICABLE TO VERTICAL BENDS.
LOCATION SPECIFIC DESIGN IS REQUIRED FOR SUCH INSTALLATIONS.

WHERE THE TRENCH SOIL HAS A BEARING PRESSURE LESS THAN 2000 POUNDS PER SQUARE FOOT, LOCATION SPECIFIC DESIGN IS REQUIRED.



PIPE AND CASING DETAIL N.T.S.



2. WRITTEN PERMISSION FROM THE OWNER OF THE RAIL BOAD TRACKS

3. NO PRIVATE UTILITIES SHALL BE ALLOWED IN CITY OF VANCOUVER CASINGS.

The contractor shall fill all open trenches at the completion of each day's work Open trenches overnight shall not be allowed. Trenches filled but not compacted shall be re-excavated the following working day and compacted according to these specifications.

CUTTING AND PLUGGING EXISTING PIPE:

provisions shall be made to automatically drain the barrel in order to protect the Where shown on the plans, the contractor shall cut and plug the existing main. The existing main, which is to be abandoned, shall have a concrete plug poured around and in the end of the pipe to be abandoned and the part of the main which is to remain shall have a new metal cap or plug installed on the existing pipe, cross or tee, or shall be connected to the new fitting or pipe with thrust restraint. All valve boxes on mains which are abandoned (cut and plugged) shall be removed and the holes shall be natched to match finished surface

CUTTING PIPE:

Cutting of all pipe and specifically asbestos cement pipe shall conform to the latest rules and regulations of the Department of Labor and Industries.

WATER SERVICES:

Water services are to be installed by the contractor, inspected by the City, Call (360) 696-8050 48 hours in advance. All excess material not used for trench backfill shall be removed and disposed of Water meters will be installed by the City only when the following have been

1. Acceptance of newly installed mains and services by the Construction

Manager including: a. Disinfection, flushing and testing mains.

b. Submittal and approval of record drawings.

2. Payment of required hook-up fees and main charges. The minimum water service size to be installed shall be 1 inch, constructed of seamless type K soft anealed copper.

ABANDONING A WATER SERVICE:

If an existing meter is to be taken out of service, when the main is not being abandoned, the service shall be abandoned by turning off the corporation stop at the main, followed by cutting and plugging the service just after the corporation stop and removing the box and meter set (voke).

HYDROSTATIC TESTING: All sizes of pipe shall be tested hydrostatically as per the requirements of section

7-11.3(11) in the most current version of the W.S.D.O.T. Standard Specification or at 150 p.s.i. for 15 minutes with no pressure drop.

DISINFECTING WATER MAINS:

Disinfection and bacteriological testing of water mains shall conform to the requirements of AWWA C651.

PREVENTING REVERSE FLOW:

Pipelines that have not been disinfected may be connected to the existing distribution system with a pre-tested closed inline valve and only at points approved by the Engineer. The contractor shall supply docume valve supplier certifying that the valve has been pre-tested.

CALL
2 BUSINESS DA,
9 BEFORE YOU F
900-553-/



ENGINEERING SERVICES
WATER ENGINEERING
P.O. BOX 1995
/ANCOUVER, WA 98668-1995

PC. P. P.

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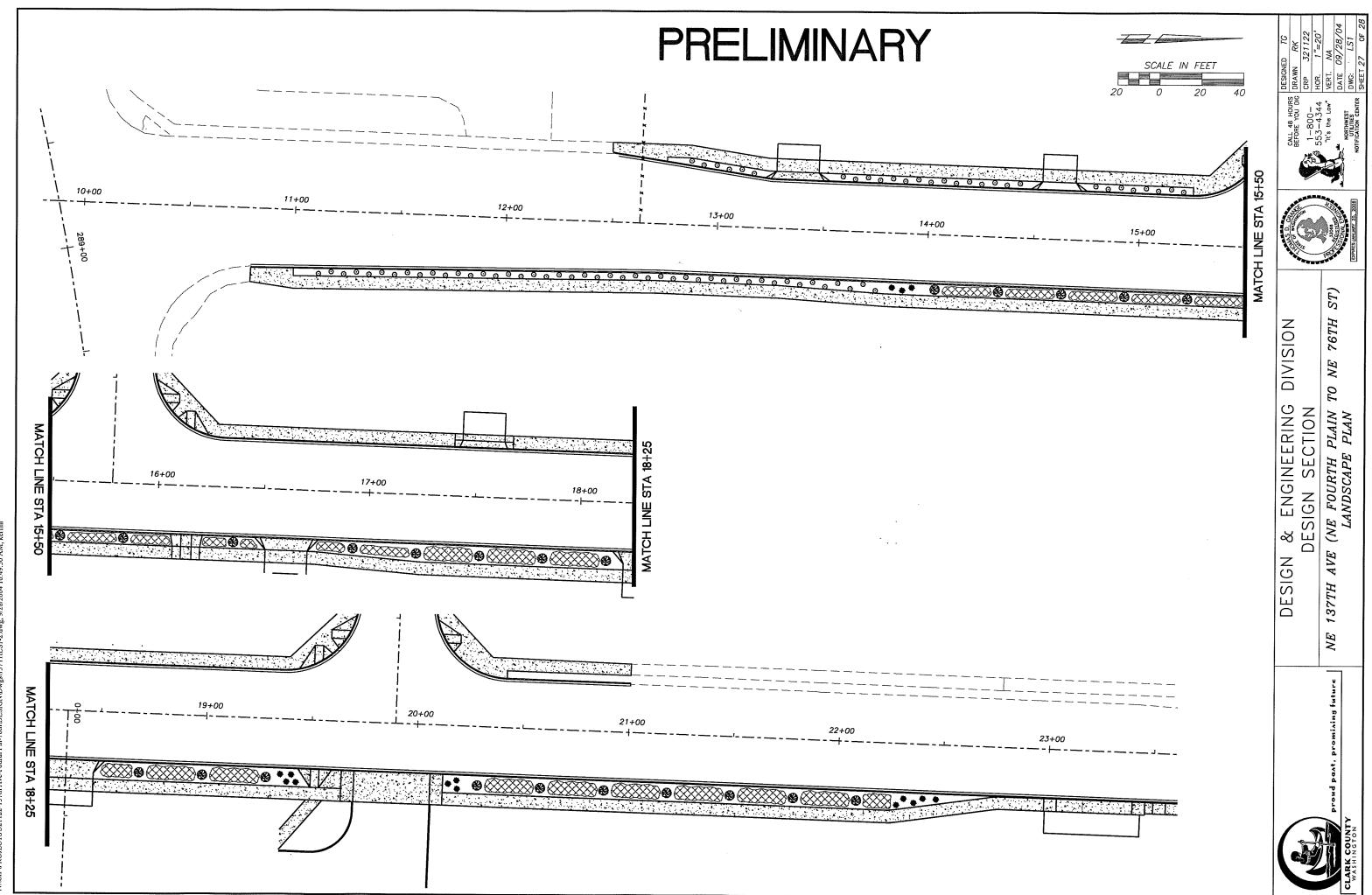
23K

DETAIL LINE 2

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STANDARD

SHEET



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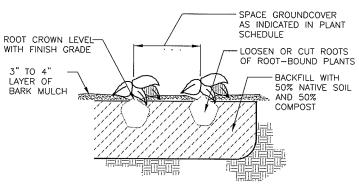
- CONTRACTOR SHALL VERIFY ALL QUANTITIES, MEASUREMENTS, AND SITE CONDITIONS.
- PLANTING PERIOD IS FROM APPROXIMATELY OCTOBER 15 TO APRIL 15, WEATHER DEPENDENT.
- 3. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES.
- 4. INSTALLED PLANTS SHALL BE IMMEDIATELY WATERED IN BY CONTRACTOR.
- ALL PLANT MATERIALS SHALL CONFORM IN SIZE AND GRADE TO THE "AMERICAN STANDARD FOR NURSERY STOCK", CURRENT EDITION.
- 6. PLANTS SHALL BE INSTALLED ACCORDING TO DETAILS SHOWN.
- NO SUBSTITUTIONS IN PLANT VARIETIES SHALL BE MADE WITHOUT APPROVAL FROM THE COUNTY LANDSCAPE DESIGNER.
- 8. LANDSCAPE WORK SHALL BE REVIEWED AND APPROVED BY THE COUNTY ENGINEER. SOME FIELD ADJUSTMENT MAY BE NECESSARY TO REFLECT ACTUAL GRADING AND SITE CONDITIONS.
- TREES AND SHRUBS SHALL HAVE 3' X 3' WEED MAT PLACED AROUND THEM AND SECURED WITH 8" STAPLES AFTER INSTALLATION.
- 10. FOLLOWING PLANT INSTALLATION AND PLACEMENT OF WEED MAT, 3" TO 4" OF BRIGHT MEDIUM RED BARK DUST, OR OTHER APPROVED EQUIVALENT, SHALL BE SPREAD THROUGHOUT PLANTING STRIPS.
- 11. FOLLOWING PLANTING, TREES SHALL BE STAKED ACCORDING TO DETAIL SHOWN.
- 12. FOLLOWING COMPLETION OF LANDSCAPE PROJECT, SITE SHALL BE MAINTAINED WEEKLY. MAINTENANCE SHALL INCLUDE: ADEQUATE WATERING OF ALL INSTALLED PLANTS TO ENSURE HEALTH AND SURVIVAL, REMOVING WEEDS FROM SITE, MOWING GRASS AS NEEDED, MONITOR TREE STAKES AND TIES TO ENSURE PROPER SUPPORT AND TO PREVENT TIES FROM GIRDLING TRUNKS. REMOVE TREE STAKES AND TIES AFTER ONE YEAR MINIMUM, OR AS NEEDED UNTIL ADEQUATE ANCHORING IS ATTAINED. BARKDUST SHALL BE REAPPLIED AS NEEDED.

PLANT SCHEDULE

Tree					
Quantity	Symbol	Scientific Name	Common Name	Planting Size	Spacing.
23	€	Acer platanoides 'Crimson Sentry'	Crimson Sentry Norway Maple	1 1/2" Cal.	30'

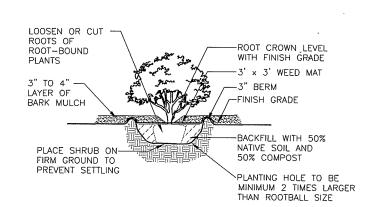
Shrub					
Quantity	Symbol	Scientific Name	Common Name	Planting Size	Spacing
15	*	Viburnum Davidii	David Viburnum	2 Gal.	4'
74	0	Berberis thunbergii 'Crimson Pygmy'	'Crimson Pyamy' Barberry	3 Gal.	as shown

Groundcove	1						
Quantity	Symbol	Scientific Name		Common Name		Planting Si:	ze Spacing
226	$\otimes \otimes \otimes$	Arctostaphylos uva—ursi	'Massachusetts'	'Massachusetts'	Kinnikinnick	1 Gallon	2 1/2' oc



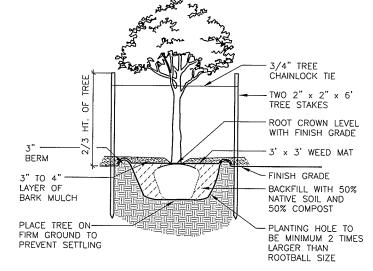
GROUNDCOVER
PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE



TREE PLANTING DETAIL

NOT TO SCALE

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